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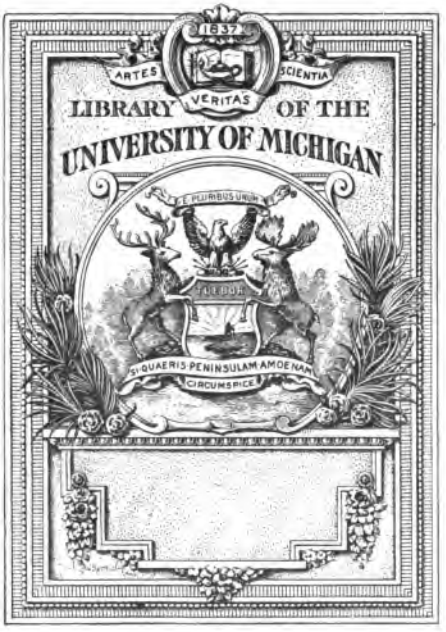
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THE Present Volume comprises the Proceedings of the Society during its first Session, January to May, 1868.

The Council think it proper to state that the Authors of the several Communications are alone responsible for the statements, reasonings, and opinions contained in their respective papers.

June 1868.

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ELECTED
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Orig Memb HOLTHOUSE, CARSTEN, Surgeon to, and Lecturer on Surgery at the Westminster Hospital; Surgeon to the South London Ophthalmic Hospital: 2 Storey's Gate, St. James's Park.

Orig Memb HULKE, JOHN WHITAKER, F.R.S. (C.), Assistant Surgeon to, and Lecturer on Physiology at the Middlesex Hospital; Assistant Surgeon to the Royal London Ophthalmic Hospital: 10 Old Burlington Street.

Orig Memb HUMPHRY, GEORGE MURRAY, M.D., F.R.S. (V.P.), Professor of Human Anatomy and Physiology in the University of Cambridge, and Surgeon to Addenbrooke's Hospital, Cambridge.

Orig Memb HUTCHINSON, JONATHAN (C.), Surgeon to, and Lecturer on Surgery at the London Hospital; Assistant Surgeon to the Royal London Ophthalmic Hospital: 4 Finsbury Circus.

Orig Memb JACKSON, J. HUGHLINGS, M.D., Assistant Physician to, and Lecturer on Physiology at the London Hospital; Physician to the National Hospital for Epilepsy and Paralysis: 28 Bedford Place, Russell Square.

Elected	
Orig Memb	Jenner, Sir William, Bart., M.D., F.R.S. (V.P.), Physician in Ordinary to H.M. the Queen, and to H.R.H. the Prince of Wales; Physician to University College Hospital: 63 Brook Street.
Orig Memb	Jones, Charles Handfield, M.B., F.R.S., Physician to, and Lecturer on Medicine at St. Mary's Hospital: 49 Green Street, Grosvenor Square.
Orig Memb	Jones, Sydney, M.B. (C.), Senior Assistant Surgeon to, and Lecturer on Ophthalmic Surgery, and on Descriptive and Surgical Anatomy, at St. Thomas's Hospital: 15 St. Thomas's Street, Southwark.
Orig Memb	Johnson, George, M.D., Physician to King's College Hospital, and Professor of the Principles and Practice of Medicine in King's College: 11 Savile Row.
Orig Memb	Kelly, Charles, M.D., Pathological Registrar to King's College Hospital: King's College, Strand.
1868	Kesteven, William B.: 2 Lansdowne Place, Upper Holloway.
1868	Langmore, John C., M.B.: 12 Sussex Gardens, Hyde Park.
Orig Memb	Langton, John, Assistant Surgeon to, and Demonstrator of Anatomy at St. Bartholomew's Hospital.
Orig Memb	Lawson, George, Assistant Surgeon to the Middlesex and Royal London Ophthalmic Hospitals: 12 Harley Street.
Orig Memb	Lee, Henry, Surgeon to, and Lecturer on Pathology at St. George's Hospital: 9 Savile Row.
1868	Levy, Julius L.: 100 Westbourne Terrace.
Orig Memb	Mackenzie, Frederick Morell, M.D., Assistant Physician to the London Hospital, and Physician to the Hospital for Diseases of the Throat: 13 Weymouth Street, Portland Place.
Orig Memb	Marcet, William, M.D., F.R.S. (C.), Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 48 Harley Street.
1868	Marsh, F. Howard, Assistant Surgeon to the Hospital for Sick Children: 19A Golden Square.
Orig Memb	Maunder, Charles F., Senior Assistant Surgeon to, and Demonstrator of Operative Surgery at the London Hospital: 29 New Broad Street.
1868	May, Edward H., M.D.: Tottenham, Middlesex.
1868	Meadows, Alfred, M.D., Physician to the Hospital for Women, and Physician Accoucheur to the General Lying-in Hospital: 27 George Street, Hanover Square.

ELECTED

Orig Memb MOORE, CHARLES HEWETT, Surgeon to the Middlesex and St. Luke's Hospitals: 102 Piccadilly.

Orig Memb MOXON, WALTER, M.D., Assistant Physician to, and Lecturer on Pathology, and Demonstrator of Morbid Anatomy at Guy's Hospital: 6 Finsbury Circus.

Orig Memb MURCHISON, CHARLES, M.D., F.R.S. (C.), Senior Physician to the London Fever Hospital; Physician to, and Lecturer on Medicine at the Middlesex Hospital: 79 Wimpole Street.

1868 MURRAY, JOHN, M.D., Chloroformist to the Middlesex Hospital: 40 Bryanston Street.

1868 MYERS, ARTHUR BOWEN RICHARDS, Assistant Surgeon to the Coldstream Guards: Tower of London.

Orig Memb NUNN, THOMAS WILLIAM, Surgeon to, and Lecturer on Operative Surgery at the Middlesex Hospital: 8 Stratford Place.

Orig Memb OGLE, JOHN WILLIAM, M.D. (C.), Physician to, and Lecturer on Pathology at St. George's Hospital: 13 Upper Brook Street.

1868 OGLE, WILLIAM, M.D., Physician to the Derby Infirmary: Derby.

1868 OPPERT, FRANCIS, M.D.: 31 Great Russell Street, Bloomsbury.

Orig Memb PAGET, JAMES, F.R.S. (V.P.), Sergeant-Surgeon Extraordinary to H.M. the Queen; Surgeon in Ordinary to H.R.H. the Prince of Wales; Surgeon to, and Lecturer on Surgery at St. Bartholomew's Hospital, and Surgeon to Christ's Hospital: 1 Harewood Place, Hanover Square.

Orig Memb PARSON, EDWARD, M.D., Physician Accoucheur and Lecturer on the Diseases of Women and Children at the Charing Cross Hospital: 8 Bolton Street, Mayfair.

Orig Memb PARTRIDGE, RICHARD, F.R.S., Surgeon to King's College Hospital, and Professor of Surgery at King's College: 17 New Street, Spring Gardens.

Orig Memb PAVY, FREDERICK WILLIAM, M.D., F.R.S., Assistant Physician to, and Lecturer on Physiology and Comparative Anatomy at Guy's Hospital: 35 Grosvenor Street.

Orig Memb PEACOCK, THOMAS BEVILL, M.D. (C.), Physician to, and Lecturer on Medicine at St. Thomas's Hospital; Physician to the City of London Hospital for Diseases of the Chest: 20 Finsbury Circus.

STATEMENT

OF THE

ORIGIN AND OBJECTS OF THE SOCIETY.

THE COUNCIL think it desirable to make the following statement relating to the Origin of the Society:—

At a private Meeting of Hospital Physicians and Surgeons, held on October 29, 1867, at 49 Queen Anne Street, under the presidency of Dr. Greenhow, it was resolved to found a Society under the name of The Clinical Society of London, for the cultivation and promotion of practical Medicine and Surgery, by the collection of cases of interest, especially of such as bear upon undetermined questions in Pathology or Therapeutics. And it was agreed that the following gentlemen, who were either present at the Meeting or had signified their desire to assist in the establishment of the Society, should be a Provisional Committee to carry into effect the proposed object, viz.:—Dr. ANSTIE, Dr. BASTIAN, Dr. BRISTOWE, Mr. BRUCE, Dr. BUZZARD, Mr. CALLENDER, Dr. CAYLEY, Mr. DE MORGAN, Dr. DUCKWORTH, Mr. DURHAM, Dr. EDIS, Dr. GREENHOW, Dr. JOHN HARLEY, Mr. ERNEST HART, Mr. HEATH, Dr. HEWITT, Dr. HILLIER, Mr. HOLMES, Mr. HULKE, Dr. HUGHLINGS JACKSON, Mr. SYDNEY JONES, Dr. MARCET, Dr. MURCHISON, Dr. PEACOCK, Dr. RINGER, Dr. BURDON SANDERSON, Mr. SIBLEY, Dr. SOUTHEY, Sir HENRY THOMPSON, Dr. HERMANN WEBER, Dr. CHARLES WILLIAMS. It was further resolved that a draft of the rules of the Society should be prepared by a sub-committee consisting of Dr. BUCHANAN, Mr. CALLENDER, Dr. GREENHOW, Mr. HEATH, Dr. RINGER, and Dr. SANDERSON.

At the first Meeting of the Provisional Committee, held at 32 Soho Square, on November 25, the Rules as proposed were discussed and amended. It was resolved that invitations to

join the Society should be forwarded together with a statement of its proposed objects and mode of operation to the Members of the Staffs of all the recognised Metropolitan Hospitals and Medical Schools, and that an adjourned meeting of the Provisional Committee should be held on December 9, to which all who should respond to this invitation should be summoned. At this Meeting the Officers and Council of the Society for the year 1868 were elected by ballot, and it was agreed that the first Meeting for public business should be held on January 10.

CLINICAL SOCIETY OF LONDON.

RULES.

OBJECT AND CONSTITUTION OF THE SOCIETY.

I. The Clinical Society of London is instituted for the cultivation and promotion of the study of Practical Medicine and Surgery, by the collection of Reports of cases of interest, especially of such as bear upon undetermined questions in Pathology or Therapeutics.

II. The Society shall consist of Ordinary and Honorary Members.

III. All legally qualified Medical Practitioners shall be eligible for nomination as members.

IV. The officers of the Society shall be elected from among the ordinary members, and shall consist of a President, four or more Vice-Presidents, a Treasurer, and two Secretaries, who with twenty other members shall constitute the Council.

ELECTION AND ADMISSION OF MEMBERS.

V. Candidates shall be proposed in writing by three members from their personal knowledge.

VI. Proposal papers, duly signed according to Rule V., shall be suspended for one meeting exclusive of that at which they are presented; the ballot taking place at the third meeting. No person shall be declared to be elected unless he shall have the votes of two-thirds of the members present in his favour; not less than fifteen being present and recording their votes.

VII. All newly-elected ordinary members must be admitted by the President, or by some member acting for him, on or before the fourth meeting after their election, unless further time be granted by the Council.

FORM OF ADMISSION.

VIII. 'By the authority, and in the name, of the Clinical Society of London, I admit you a member thereof.'

ELECTION OF HONORARY MEMBERS.

IX. The Council shall have the power of proposing men of distinction in Medicine or Surgery for election as Honorary Members. The elec-

tion of such members shall be conducted in the same manner as that of ordinary members, and they shall have the privilege of attending the ordinary meetings of the Society.

RETIREMENT OR EXPULSION OF MEMBERS.

X. Any member may retire from the Society after signifying his intention in writing to the President, and paying whatever contribution may be due from him to the funds of the Society.

XI. The expulsion of a member can take place only at a general meeting of the Society, specially convened for the purpose; two-thirds at least of the members present voting for the expulsion, and not less than fifteen members recording their votes. Of such meeting the Council shall give at least fourteen days' notice in writing to all the members of the Society.

CONTRIBUTIONS OF MEMBERS.

XII. Every ordinary member when elected shall pay in advance the sum of one guinea, being the annual subscription; and all members elected after the termination of the first session shall pay in addition an entrance fee of one guinea.

XIII. All subsequent annual subscriptions shall be payable in advance in the month of October in each year.

XIV. Any member whose subscription shall not be paid within twelve months after it has become due shall cease to be a member of the Society.

ELECTION OF OFFICERS AND COUNCIL.

XV. All the ordinary members shall be summoned by letter to the Annual Meeting in January, notice being given a week beforehand, and the hour of meeting being stated.

XVI. The President, Vice-Presidents, Treasurer, and Secretaries shall be elected by ballot at each annual meeting.

XVII. One-third of the members of the Council shall be replaced at each annual meeting by an equal number of members chosen from the Society at large.

XVIII. Balloting lists of the members recommended by the Council to fill the vacant offices shall be prepared by the Secretaries, and transmitted by post, together with the summons to the annual meeting, to every ordinary member of the Society.

XIX. The Secretaries shall receive the lists during the first hour of the annual general meeting; at the end of the hour they shall be delivered by the President to two scrutineers, who shall report the result to the meeting.

XX. In the event of equality of suffrage the President shall determine by lot.

XXI. The Council shall have the power of filling up any vacancies which may occur in any of the offices of the Society between one annual meeting and another.

THE PRESIDENT AND VICE-PRESIDENTS.

XXII. The President shall regulate all the proceedings of the Society and Council, state and put questions, interpret the application of the Bye Laws, and decide every doubtful point. He shall check irregularities and enforce the observance of the laws. He shall sign the Minutes of General and Council meetings, and return the thanks of the Society to the authors of communications.

XXIII. In the absence of the President, one of the Vice-Presidents, the Treasurer, or some other member chosen by the Council, shall perform his duties.

THE SECRETARIES.

XXIV. The Secretaries shall have the management of the correspondence of the Society and Council.

XXV. The Secretaries shall attend all the meetings of the Society and Council. They shall take minutes at each meeting which they shall read at the following meeting. They shall notify the election of candidates. They shall read cases which are forwarded to the Society by persons who are not members thereof.

XXVI. The Secretaries shall keep a Register of all the cases read at the ordinary meetings of the Society, and shall receive and have charge of all papers intended for publication in the Society's Transactions.

THE TREASURER.

XXVII. The Treasurer shall receive all money due to the Society, and shall make all payments which may be ordered by the Council; keeping a particular account of such receipts and payments.

XXVIII. The Treasurer shall keep a printed receipt-book for annual subscriptions. Each receipt shall be filled up with the name of the payer, the date, and the session for which the subscription is paid. Each receipt shall be signed by the Treasurer and countersigned by the Collector, who shall, when he gives the receipt, enter and sign a copy of the particulars on the counterfoil of the Receipt-book.

XXIX. The President, one of the Secretaries, and two members of the Society, nominated by the President at some meeting of the Society previous to the annual meeting, shall form a Committee to audit the Treasurer's accounts.

XXX. The Audit Committee shall present a written Report to the Society at the annual meeting, and shall be prepared to answer any questions regarding the state of the funds of the Society.

THE COUNCIL.

XXXI. The Council shall have the management of the affairs of the Society.

XXXII. The Council shall meet on the second Friday in every month during the session, or oftener should they see occasion, at half-past 7 P.M. precisely. Three shall form a quorum. Notice of all extraordinary meetings shall be transmitted by the Secretaries to every member of the Council.

XXXIII. The President or any three members of Council may call an extraordinary meeting of the Council.

XXXIV. The Council shall determine questions by vote, or by ballot if demanded; the President having, in both cases, a casting vote.

XXXV. The Council shall deliberate and decide upon all questions relating to the publication of the Society's Transactions.

XXXVI. The Council shall, from time to time, appoint such Committees, make such regulations, and issue such orders, as shall appear to them conducive to the good government of the Society and to the proper management of its concerns.

TRANSACTIONS.

XXXVII. The Transactions of the Society shall be published at such times and in such form as the Council may direct.

XXXVIII. The Transactions shall be presented to all ordinary members of the Society who shall have paid their annual subscriptions.

XXXIX. The Transactions shall be purchaseable by members of the Society at prime cost.

ORDINARY MEETINGS OF THE SOCIETY.

XL. The Ordinary Meetings of the Society shall be held on the second and fourth Fridays in each month, from the second Friday in October to the fourth Friday in May of each year, at half-past 8 P.M. precisely.

XLI. Each member may introduce two visitors on writing their name in a book kept for the purpose. The same visitor shall not be introduced more than three times during one session.

XLII. The business of the ordinary meetings shall consist in the receiving of communications of two classes; those of the first class relating to cases of which the records are complete, those of the second class to cases still under observation.

XLIII. As regards communications of the *first* class, a written report of the case or cases must be forwarded to one of the Secretaries a week before the day of the meeting at which the communication is intended to be made. The report of each case must comprise a complete record of the state of the patient when first observed, investigated according to the most approved clinical methods; a statement of the family and personal medical history of the patient, including a narrative of the

present illness previous to the patient's coming under observation; a record of the state of the patient when last seen, or in fatal cases a record of the post-mortem examination, together with an abstract of the progress and treatment of the case since first observed.

XLIV. As regards communications of the *second* class, a brief statement of the principal facts of the case shall be furnished in writing to one of the Secretaries before the day of the meeting at which it is proposed to be communicated to the Society. If it appear expedient with reference to communications of this class, a committee of one or more members may be nominated by the President with the consent of the person making the communication, to co-operate with him in investigating the case.

XLV. Every communication shall conclude with explanatory remarks by the author; and, whenever it be possible, the facts recorded should be demonstrated by the exhibition, either of the patient, or of photographs, drawings, or casts, and also by microscopical and chemical analyses. Cases already published by the author shall not as a rule be received by the Clinical Society.

XLVI. At the ordinary meetings of the Society nothing relating to its laws or management shall be considered. The discussions shall be confined to questions relating strictly to communications.

XLVII. The election of new members may take place at any ordinary meeting, at which fifteen members shall be present. Ten shall form a quorum for ordinary business.

ANNUAL AND SPECIAL MEETINGS.

XLVIII. The annual meeting of the Society for the Election of the Officers and other members of the Council shall be held on the night of the first meeting of the Society in January.

XLIX. The President and Council may at any time, on giving notice a week beforehand, convene a special general meeting of the Society for the consideration of particular business, the nature of which must be specified in the letter of summons convening the meeting.

L. New laws, or alterations in the existing laws, shall be proposed by the Council only at the annual meeting of the Society in January; notice of all such proposals being transmitted to every member, together with the summons to the Annual Meeting. For the adoption of laws or changes so proposed, the votes of two-thirds of the members present must be in favour of the proposal.

LI. Any Member may suggest to the Council alterations in the laws, by letter addressed to the Secretaries.

Regulations adopted by the Council in accordance with Rule XXXVI.

1. Excepting when the Council shall for some special reason decide otherwise, communications shall be read in the order in which they are

received. Cases not read at any meeting from want of time shall be taken in their order at the following meeting. Cases not read on account of the absence of the author shall be removed from the list; but if the author shall thereafter intimate to the Secretaries that it is still his intention to communicate any such case, it shall be replaced in the order of date of such intimation.

2. If any member, in furnishing to the Secretaries, in accordance with Rule XLIV., a statement of the principal facts of a case under observation, shall express his desire that a Committee be appointed to cooperate with him in investigating it, and it shall appear to the President expedient to appoint such Committee, the case shall be narrated at the meeting of the Society next following the day on which the Report of the Committee is received by the Secretaries, immediately after which the Report shall also be read and discussed.

3. No discussion shall take place on any Report relating to a case already communicated and discussed at a previous meeting.

4. The President shall have authority to nominate, from time to time, as may seem expedient, Committees of the Society for the purpose of conjoint investigation of Clinical, and especially Therapeutical questions.

5. Each Committee appointed by the President to enquire into any Clinical or Therapeutical question shall consist of three or more members of the Society.

6. Each Committee shall report to the Society within a time determined by the President not exceeding three months. If, however, it be not possible to complete the enquiry within the period appointed, it shall be competent for the President at any time to prolong it.

7. As a rule, the Report should relate only to original Clinical observations. Every fact recorded in it should be verified by at least two of the members of the Committee. With reference to any fact not so verified, it should be stated by whom it has been observed.

8. Every Report should consist of three parts, namely:

(1) Cases under observation;
(2) Summary of facts observed;
(3) Conclusions.

INAUGURAL ADDRESS

BY

SIR THOMAS WATSON, BART., M.D.

GENTLEMEN,—I am very sensible of the great honour you have done me in electing me the first President of the Clinical Society. Reluctant as I not unnaturally am to assume, at my time of life, any fresh duties or obligations, I yet must confess that I have extreme satisfaction and pleasure in accepting at your hands this new office; for the Society which we are founding to-night seems to me well calculated gradually to bring about that which, in my judgment, is the thing most needful at present among us—I mean, more exactness of knowledge, and therefore more direct and intelligent purpose, and more successful aim, in what is really the end and object of all our labours—the application of remedies for the cure or relief of disease. Certainly, the greatest gap in the science of medicine is to be found in its final and supreme stage—the stage of therapeutics. The coarser anatomy of the human body is sufficiently well known. Its material pathology, also, under the auspices especially of a sister society, has been, I will not say completely, yet very amply and fruitfully ransacked by the diligent scrutiny and study of the dismal but instructive revelations of the dead-house. I say its material pathology: for the condition of doctrinal pathology must necessarily partake of whatever imperfection may be found in the correlative science of physiology. Again, we have attained to a great degree of certainty in the detection and discrimination of disease in the living body. We know tolerably well what it is that we have to deal with; but we do not know so well—nor anything like so well—how to deal

with it. This is more true, no doubt, in the province of the physician than in that of the surgeon; but it is lamentably true in both provinces. We want to learn distinctly and clearly what is the action of drugs and of other outward influences upon the bodily organs and functions; for everyone, now-a-days, I imagine, acknowledges that it is only by controlling or directing the natural forces of the body that we can reasonably hope to govern or guide its diseased actions. To me it has been a life-long wonder, how vaguely, how ignorantly, how rashly, drugs are often prescribed. We try this; and, not succeeding, we try that; and baffled again, we try something else; and it is fortunate if we do no harm in these our tryings. Now, this random and hap-hazard practice, whenever and by whomsoever adopted, is both dangerous in itself and discreditable to medicine as a science. Our profession is continually fluctuating on a sea of doubts about questions of the gravest importance. Of this the evidence is plentiful and constant. Let me substantiate what I am now saying by one or two glaring instances. Within our own time the old—and, as might have been hoped, obsolete—controversy between the Cullenian and Brunonian schools has been revived in all its former extravagance. Many who are here to-night can recollect the period when blood-letting was reckoned the 'summum remedium' against, at least, all forms, or most forms, of inflammatory disorder; which was to be starved out also by the strict enforcement of what was called the antiphlogistic regimen. At present, there are many, I believe, who yet hold that to deprive a patient of an ounce of his blood is to sap his strength and to aggravate his danger; and that, for all ailments, brandy is the grand and easy panacea. One generation extols mercury as the sole and unfailing remedy for syphilis; the next attributes all the worst evils of that hateful disorder to the very mineral which had been administered for its cure. Even now, at this present time, a hot contention, of most weighty import, fills the air around us upon the question whether, when cholera is present in the community, we should treat the diarrhœa, presumed to be the prelude or the commencement of cholera, by opium and astringents, to check the discharges from the bowels, or by castor oil to promote them.

I say this uncertainty, this unseemly variation and instability of opinions, is a standing reproach to the calling we profess. It has shaken the faith of many men, of men both able and thoughtful, and driven them to ask themselves whether any kind of medication, other than the 'vis medicatrix naturæ,' is of any real efficacy or value. Well! this is one of the questions which it will be competent for the Clinical Society to settle.

In order to clear the ground for correct observation, and in order to the avoidance of fallacies in observing, it is most desirable, when it can be done without harm or known hazard to the sick, to learn, respecting all distinct and recognised forms of disease, what would be their course, what their tendencies, what their results, if left to themselves, and submitted to no kind of remedial treatment whatever; to ascertain, in a word, what it has become the fashion to speak of as the natural history of disease. For this purpose, again, the Clinical Society may be expected to furnish help.

Truly, there are diseases in which it seems to be our main business to stand by and look on, to see that nature has fair play, that the patient has the requisite advantages of rest, and warmth, and pure air, and proper food, and no more; to watch his recovery, not to attempt his cure. Probably all the specific fevers, that run a definite course, are of this kind. Medicine needs to step in only to redress some untoward deviation from that regular course, or to facilitate and fortify the natural recuperative efforts. But there are innumerable other disorders for which rest and warmth, and a pure atmosphere, and a well-adjusted diet, are not sufficient. There are cures as well as recoveries, and there are remedies that are equal to the cure. Still, of therapeutics as a trustworthy science, it is certain that we have, as yet, only the expectation. The influence of drugs upon the bodily conditions of health and disease is indeed most real, and most precious to us; and some of them we have learned, in our contests with disease, to wield with much confidence and success. Who can doubt the efficacy of opium and of anæsthetic vapours in blunting the sensibilities of the body, and so quelling pain? No one questions the marvellous power of quinine to stop malarious fevers and other periodic complaints, or of

the iodide of potassium to eliminate from the body, apparently by first dissolving them, certain poisonous or hurtful elements. The rough yet sanative effects of emetic and purgative drugs are notorious to all. But there is a host of other known or reputed remedial substances—to say nothing of a further host no doubt hitherto unthought of and unessayed—about which our practical knowledge is very loose, imperfect, and even misleading. Concerning the peculiar virtue and specific agency of each and of all these, present and to come, we want sound and multiplied experience. There is no other way. The required knowledge must needs be gathered empirically, and by many hands. And as there are many drugs and medicaments yet unproven, so there are also many shapes of disease of which the true nature and origin are still disputed or doubtful. Of all these matters will this Clinical Society, if I rightly apprehend its scope and purpose, take cognisance. Full and faithful descriptions, brought before it by competent and accurate observers, of the symptoms, circumstances, and progress of disease in the living body, and of its behaviour under treatment by medicines prescribed with singleness and simplicity, and a definite aim and object, or sometimes, it may be, of its behaviour under no treatment at all; authentic reports of trials with medicinal substances upon the healthy human body; contributions of this order, multiplied in number, compared together, contrasted, sifted, and discussed by a variety of keen and instructed minds—of minds sceptical in the best and true sense of that word—must lead at length, tardily perhaps, but surely, to a better ascertainment of the rules, peradventure to the discovery even of the laws, by which our practice shall be guided; and so bring up the therapeutic department of medicine to a nearer level with those other parts which are strictly ministerial and subservient to this. And I think I do not entertain an extravagant expectation of the results of the formation of this Society, when I express my belief that, if wisely and strictly managed, it will hereafter be spoken of as the starting-point of a vast and solid improvement in that which is our special office in the world, the scientific and intelligent exercise of the divine art of healing.

COMMUNICATIONS.

I.—*Case of partial Resection of the Shoulder-joint.* By C. F. MAUNDER. *Read January* 10, 1868.

MRS. T., aged 62, the mother of two children, was first seen by me, in consultation with Mr. Chandler, on March 25, 1867.

We found her in bed, semirecumbent, supporting the right arm most carefully with the left. Her countenance was expressive of physical suffering as well as of dread at our approach. She was very thin, having lost flesh during her illness; had scarcely any appetite, and rarely enjoyed sound sleep, being usually disturbed at the moment of falling asleep by starting pains in the right shoulder. So easily were painful sensations excited that she was obliged to occupy a bed by herself. Her health was rapidly giving way.

On exposing the right shoulder, a small fistulous opening, whence pus oozed, was observed on the anterior aspect of the joint corresponding with the upper end of the bicipital groove; the whole limb was wasted and the acromion process prominent. She, as it were, hugged the extremity to the side and was greatly averse to manipulations of the limb—a slight attempt at rotation of the humerus as well as pressure over the head of this bone causing severe pain. There was no reason to suspect disease of important viscera.

Medical History.—After her second confinement she was the subject of abscess of the right mamma, from which she

recovered slowly. When twenty years old she had an attack of acute rheumatism which laid her up for more than a month. After an interval of twenty-nine years she had a second attack of rheumatic fever, and a third attack six months subsequent to the second; this latter affecting the upper extremities chiefly, and more especially the right. Six years ago she was laid up for the fourth time, with subacute rheumatism, in the upper extremities principally, and since that period has never had proper use of the right arm, and almost always more or less pain about the right shoulder. About eighteen months since the occasional discomfort in the shoulder was increased to a constant aching, gradually getting worse, and attended by inability to use the member. Twelve months ago a red spot, associated with swelling over the front of the joint, arose and broke spontaneously eight months since, discharging pus, and being soon followed by an aggravation of symptons. During three weeks previous to my visit she had kept her bed in consequence of extreme feebleness, induced, she thinks, partly by the discharge and partly by the loss of appetite and loss of sleep caused by the severe pain.

Family History.—There is no history of rheumatism in any member of her family.

Operation.—It was agreed that the diseased portion of bone or bones should be resected, and on April 3, the patient having been admitted into the London Hospital, and being under the influence of chloroform and semirecumbent, a longitudinal incision, about three inches in length made in front of the joint and including the fistulous aperture already mentioned, allowed the head of the humerus to be protuded after section of a remnant of the capsular ligament and of the atrophied capsular muscles. The long head of the biceps had been destroyed. The head of the bone having been sawn off, the lower half of the glenoid cavity, which was devoid of cartilage and rough, was cut away by bone forceps. The posterior wall of the joint was now perforated and a drainage tube tied in so as to present both back and front. No vessel required a ligature.

The wound was closed by suture, except at the spot at which the india-rubber tube projected, and the patient placed in bed with the arm by her side supported on a pillow, and the fore-arm resting on the lower part of the chest. On the following day, although the shoulder was free from the old pains, rheumatism reattacked the right wrist and elbow, and

gave her great discomfort for three or four days. After the subsidence of the attendant pain and swelling she began to take food well, and in a fortnight was able to sit up and use her knife and fork at meals. During the first week subsequent to operation the drainage tube was retained, and so favoured the flow of pus towards the back of the joint that the operation wound, with the exception of the fistulous opening already mentioned, quickly closed. The patient soon gained strength, and after the lapse of three weeks could dress herself and even use the right arm to assist in pulling on her boots. She remained in hospital rather more than a month, and after the first fortnight passive motion was occasionally adopted, and she also began to use the limb voluntarily.

Present State.—To-day, and nine months subsequent to operation, my patient is in capital health, having begun to gain flesh and strength immediately after the performance of the resection.

Locally, it will be seen that the right shoulder has lost its natural rounded aspect, the acromion process being prominent and the deltoid muscle wasted; the coracoid process is also unusually evident. When the limb is at rest, the upper end of the humerus lies just under the coracoid process, but it is not fixed in that locality, and can be both rotated there and be lifted backwards and upwards somewhat towards the position of the glenoid cavity. Along the front of the original joint, a longitudinal cicatrix, three inches in length with a depression near its centre, marks the site of my incision and of the original fistulous aperture.

The natural movements of the limb are of course more or less curtailed, but it is a very serviceable member. The hand can be raised to the level of the eyes, and the limb can be rotated inwards so as to allow of the knuckles being placed upon the lumbar spines. The elbow can be abducted and raised from the side of the chest to an angle of 45°. She can dress and feed herself, and indeed can perform all the manipulations requisite to her domestic duties. She cannot, however, advance the limb much, as in the act of shaking hands.

Since the operation she has never experienced the least pain or discomfort in the shoulder.

Remarks.—Mr. Chandler and I were of opinion that the patient was the subject of suppurative disorganisation of the shoulder-joint, associated with more or less ulceration of

cartilage and caries of bone. It also appeared to us that the patient was so worn out by physical suffering that the question now was, how to save life. It was too late to discuss a method of treatment short of operation with the hope of arresting the disease, and as we believed the important viscera to be healthy and the disease to be restricted to the joint surfaces of the bones, we had no hesitation in advising excision.

Excision of the shoulder-joint, either complete or partial, is an operation which from one point of view (the future utility of the limb) may be postponed as long as possible with the hope that it will not be ultimately necessary; because, should the disease result in anchylosis, the limb by reason of the mobility of the scapula will become as useful as under circumstances attending excision. If, however, life is in danger all minor considerations must be set aside and the operation must be performed. I make the above observation as regards 'time when' for excision of the shoulder and may explain my meaning by contrasting with it the 'time when' for excision of the elbow. In the case of disease of this latter joint I should operate comparatively early, because in the majority of instances I should expect a more useful result than if the disease ran its natural course and terminated in anchylosis. After excision of the elbow-joint the surgeon may safely promise his patient a fair amount both of flexion and extension of the fore-arm, and of rotation of the radius.

As to the method of operating, that by a single longitudinal incision in front of the joint is preferable to others. By it less injury is inflicted upon muscle, vessels, and nerve than by any other mode. The incision should run over the bicipital groove and then the long tendon of the biceps (if not already destroyed) can be readily exposed, and be dissected out of its bed and be turned aside over the internal tuberosity, and saved if thought desirable. The incision being also situated between the tuberosities of the humerus, the insertions of the muscles into these processes can be severally brought into view, for section, by rotation of the limb, while the lips of the longitudinal incision are held apart by retractors. Whether in amputation through the shoulder-joint or in resection of the head of the humerus only, the operator should bear in mind that both the teres minor and subscapular muscles, especially the former, have an insertion to the extent of nearly an inch down the humerus as well as into their respective

processes, and must not forget to sever these prolongations in order to facilitate disarticulation. If these latter points are attended to, the head of the humerus can be readily protruded at the wound, by raising and carrying the point of the elbow backwards, and the operation is a comparatively easy one. Having completed the section of the humerus which appeared to be healthy though pale, a drainage tube was passed through the joint cavity and brought out through the posterior wall. By this means, the patient being recumbent, all discharges flowed away as fast as secreted; and to this I in great measure ascribe the quick closure of the operation wound.

Condition of the Head of the Humerus.—On examination, the head of the humerus was found to be totally devoid of cartilage and rough; three or four osteophytes bordered its anatomical neck.

II.—*Cases of Exophthalmic Goitre.* By Morell Mackenzie, M.D. *Read January* 10, 1868.

I.—*Exophthalmic Goitre, with Palpitation of the Heart; Systolic Aortic Bruit; pulse at* 170; *Throbbing of the Carotids; &c.*

Elizabeth F., aged 40, came under my care, at the Hospital for Diseases of the Throat, on September 5, 1867, on account of a beating in the neck. On examining her it was found that she was suffering from exophthalmic goitre.

She stated that she first noticed a swelling in the neck about twenty years ago. At that time she suffered from a slight cold in the throat, and a few leeches were applied by the advice of a medical practitioner. Shortly after this, she first observed a swelling in the front of the neck. Her friends noticed the staring expression of her eyes three or four years ago, but it has become much worse during the last two years, as have also the other symptoms.

During the last year she has had to work a sewing-machine daily for a great number of hours, and this has seemed to act very unfavourably on her health, and the palpitation from which she has suffered for many years has affected her much more since she did the machine-work.

She has never been strong, having suffered from cholera in 1849 and again in 1854, and since the first attack having been always subject to diarrhœa. In 1862 she had low fever; she suffered also slightly from dysmenorrhœa before the goitre first appeared, but the menstrual function is now normal. She married four years ago and has had five miscarriages and one child, who died at the age of eight months. The patient's father died at fifty-five, of consumption, and her mother at the same age of dropsy. There is no family cachexia.

The following is her present condition: She is pale, very thin, weak, and cachectic-looking, and complains of great palpitation of the heart and throbbing in the neck. She is nervous and trembles a great deal, and, as a rule, sleeps badly. Her appetite is pretty good, but she suffers very much from diarrhœa. This is greatly increased when she has any special cause for anxiety. The urinary secretion is normal. There is enlargement of both lobes and of the isthmus of the thyroid gland, the right lobe being 3 in. by 1½ in., the left 2 in. by 1½ in., and the isthmus 1½ in. by 1 in. These measurements represent half the circumferences of the different tumours in the vertical and horizontal directions; the former being in all cases the longer. She has a sensation of something tied round the throat; the eyeballs are exceedingly prominent, the conjunctiva being visible to the extent of a quarter of an inch above the iris, the insertion of the recti can be plainly seen, and the symptom recently pointed out by von Gräfe — viz. diminished power of coordinate movement of the eyelids, when the eyes are directed downwards, is very marked. There is no increased vascularity of the conjunctiva. The sight is not very good, a thick mist often appearing before the eyes. Her eyes feel moist, but the tears fall on the cheek. The pupils are slightly contracted. A careful ophthalmoscopic examination, made by Dr. Hughlings Jackson, failed to detect any disease of the optic disc.

The characteristic staring expression of the exophthalmic is very marked.

The carotids throb strongly, whilst the radial pulse is small, weak, irregular, and very frequent, varying between 120 and 170. On September 12, Dr. Beigel counted it at 160. Sphygmographic tracings of the carotids and radials have been taken by Dr. Anstie. The impulse of the heart

is very violent, and there is an aortic systolic murmur. There is an increase of cardiac dullness.

When she first came under treatment, iodide of potassium was given, and she slightly improved under this plan of treatment. Five grain doses were given thrice daily. She considered it did her a very great deal of good, but complained of its producing a feeling of great coldness, so much so that she was unable to continue it. On December 2, tinct. digitalis was ordered—15 minims thrice daily. At the end of a fortnight very great improvement was noticed. She felt much stronger, and, on December 20, remarked that whilst a few months ago she could scarcely walk across the room, on that day she had been out all the morning. The diarrhœa is slightly checked, but still variable. On January 26 the patient still thought she was improving.

A comparison of a very accurate drawing taken when the patient first came under treatment, with her appearance when she was first brought under the notice of the Fellows, shows that considerable improvement has taken place, at least as regards the proptosis and goitre. The pulse is much less frequent and more steady.

II.—*Exophthalmic Goitre, with Mitral and Aortic Bruits; Palpitation, intermittent Pulse, &c.*

Susan F., aged 38, a gardener's wife, came under my care at the London Hospital, in October 1867, on account of difficulty of swallowing. On making an examination it was at once perceived that the dysphagia was due to enlargement of the thyroid gland, and that the patient was suffering from exophthalmic goitre. She stated that she had never been very strong, and latterly had experienced a great deal of dull pain, with occasional paroxysms of a severe darting character in the head. She had slept very badly for some months, and latterly had often been obliged to get up in the night and stay up several hours on account of the severe pain in the head. Last April she noticed a slight swelling in the neck, and this has gradually increased since then. Ten years ago she had a similar swelling, but that disappeared of its own accord in the course of a few months. During the last year menstruation had been regular, but very scanty. She had never been pregnant. No relations had ever suffered from any similar affection. She attributes the disease,

which came on a few months after her removal to Woodford, to the water which she drank.

Her present condition is as follows: She is rather thin and weak, but does not complain of pulsation in the neck nor palpitation of the heart, though these symptoms are very marked objectively. The thyroid gland is much enlarged and very hard; the right lobe measures 3 in. by $1\frac{1}{2}$ in., the isthmus $2\frac{3}{4}$ in. by 2 in., and the left 2 in. by 1 in. These measurements were made in the same way as in the last case. The tumour can be seen and felt to pulsate strongly.

The eyeballs are slightly prominent, and the patient had noticed a feeling of moisture of the eyes, though tears had not actually been shed. About one-eighth of an inch of the conjunctiva was apparent above the iris. The pupils contract slowly and are rather dilated. Dr. Hughlings Jackson kindly made an ophthalmoscopic examination, but nothing abnormal was found.

The carotids throb violently, and the radial pulse is 120, weak, intermittent, and variable. Sphygmographic tracings of the pulses have been taken by Dr. Anstie. There is a regurgitant, mitral, and direct aortic murmur, and as there is increased dullness in the cardiac region, there is probably dilatation of the left ventricle.

The patient was admitted into the Hospital December 7, and was given a very nourishing diet, with a small quantity of stimulants. Ice was applied almost continuously over the thyroid gland, and 15 minims of the tinct. digitalis were given thrice daily from December 14 to December 27. As by that time it had done no good, and produced sickness, it was discontinued and some effervescing medicine was ordered.

The size of the tumour has slightly diminished, and the exophthalmia is less marked; but the patient's general condition is much worse, she is considerably weaker, is obliged to keep her bed, and has œdema of the lower extremities.

III.—*Exophthalmic Goitre; Palpitation and Throbbing of the Carotids; Epileptiform Convulsions; Maniacal Paroxysms; Death.*

Sarah P., aged 20, came under my care, at the Hospital for Diseases of the Throat, November 7, 1867, on account of a swelling in the neck. Her condition at that time was as

follows: She was a fair, delicate-complexioned girl, well nourished, with large blue lustrous eyes, abundance of fine light hair, and, but for the swelling of her throat, a thorough type of Saxon beauty. Her mother stated that the swelling of the neck was first noticed four years and a half previously, that it had increased slowly for four years, but that during the last six months it had made rapid progress. The girl had never seemed very strong, but had formerly been remarkably intelligent. Latterly, however, she had become drowsy, capricious, irritable, and wilful.

Twelve months ago, a relative, who had returned home after a year's absence, noticed an alteration and enlargement of the eyes. A year before that one of her brothers died, and this seemed to prey upon her mind. Her appetite, which was previously good, became very small, and, though she ate bread and butter, she entirely refused to take meat. She said that she slept well, but never felt refreshed in the morning. The sister of her father suffered from a goitre, and one of her younger sisters is similarly affected. She has had diarrhœa when subject to mental irritation. The catamenia have always been regular, and she has no leucorrhœa.

The following is her present condition, November 12: She has a very large, hard, slightly nodulated hypertrophy of both lobes of the thyroid gland, and her neck measures 16½ in. round the largest part of the tumour. It is larger on the right side, and presses the right carotid (which is thickened, tortuous, and feels like a hard cord) to the posterior part of the neck. The beat of the left carotid is slightly accentuated. The impulse of the heart is considerably increased, but the sounds are natural. The pulse is 90, and weak; her appetite is bad, and the mucous membrane of the mouth decidedly anœmic. The goitre was treated by counter-irritation, and small doses of iron were administered. The patient seemed to remain in about the same condition for some time, but on December 6 her mother called to say she had had a fit two days previously. Dr. Graham, who had been called in, had very judiciously ordered ice to be applied to the bronchocele; but this treatment had not given much relief. She was received into the hospital the same day.

On admission she was found to be in a state of hebetude. When sleeping, however, she tossed about a great deal, and had to be constantly watched, to prevent her falling out of bed. Her pulse was 120, and not particularly weak. The right carotid throbbed violently, and the impulse of the heart

was excessive. Six leeches were applied to the thyroid gland, and 15 minims of tinct. digitalis were ordered every four hours. She was put upon 6 oz. of wine daily, and ordered beef tea, strong broth, milk, &c. She passed a tolerable night, and the following morning seemed rather better. The pulse was 100. Six leeches were again applied. In the evening she seemed much worse, the palpitation was very violent, and the pulse 150.

Dec. 9.—The patient had passed a bad night. The pupils were much dilated, and she had clonic convulsions of the fingers; at half-past eleven an epileptic fit (with livid face, clenched teeth, foaming lips, convulsions of the limbs, &c.) came on. This was followed by coma, lasting sixteen hours.

10.—She was still drowsy, leeches were again applied to the neck, and in the evening she seemed better.

A mixture of camphor and ether was ordered instead of digitalis, but she refused it, and would not take any food.

12.—She had a maniacal fit which lasted three hours. Whilst in the paroxysm she refused food, screamed, tried to bite those round her, repeated a verse of a hymn forty or fifty times over, implored the nurses to make her take her medicine, and, after drinking it, begged for some more. She also said she knew she was dying, and called for her relatives, constantly repeating the same cries for five or ten minutes together. These appeals alternated with prayers and blasphemy. The period of excitement was followed by a semi-comatose condition. Occasionally she asked for tea, but refused everything else.

She had several maniacal attacks during the next few days. They generally lasted from three to four hours. In her paroxysms she would often drink large quantities of beef tea, milk, &c., but in her lethargic condition she would take nothing. In the semi-comatose state she tossed about a great deal, and became rather violent when an attempt was made to rouse her.

I noticed on the 15th that the radial pulse, which was 130, had the same throbbing character as the carotids—a very unusual circumstance in these cases. No albumen was found in the urine.

17.—In the previous night she had been very restless, and, at times, extremely violent. Cold sweats came on in the afternoon, and the urine was passed involuntarily. The pulse was 150, very feeble, and the carotids no longer

throbbed. She died at six in the evening, after a mild epileptic fit.

The autopsy was made twenty-one hours after death.

The brain, spinal cord, and ganglia of the sympathetic system were removed, and their examination was kindly undertaken by Mr. Lockhart Clark. As that gentleman's mode of examination requires some time for preparation, I am unable to bring under the notice of the Society the result of his valuable investigation. He states, however, that 'The substance of the cerebral tissues was not unnaturally soft; nor was there any clot or embolism anywhere, but the corpora quadrigemina and the medulla oblongata—particularly its posterior part—were very soft, and on minute examination displayed the usual appearance of common softening. The fits and death were probably produced by the sanguineous fluid which was found (to the extent of a drachm or two) in each lateral ventricle, and to the softening of the medulla oblongata.'

I should mention that the membranes of the brain were found to be turgid with blood. Dr. Sutton, Pathologist to the London Hospital, examined the heart and large vessels, and the following is an abstract of his report:—

'About a quarter of an inch above the apex of the left ventricle, the pericardium is roughened by a patch of the size of about $\frac{3}{4}$ in. by $\frac{1}{4}$ in. Going off from this is a single band about a line in thickness, which unites the visceral and parietal layers of the pericardium. The pulmonary artery and aorta are bound together. The quantity of fat on the surface of the heart is in excess for so young a subject. The left ventricle is of natural size, its walls are normal, the muscular structure apparently healthy; the mitral valves are normal, excepting a little atheroma at their bases. The aortic valves contain some atheromatous material at their bases, and are perforated along their free margin, and very thin, as if attenuated. There is also atheroma about the sinuses of Valsalva. The walls of the aorta and pulmonary artery are very thin.'

The parts of the heart and great vessels not mentioned in the report are healthy. The thyroid gland was much enlarged, and its right lobe passed round behind the œsophagus and came in contact with the spinal column. Its structure showed hypertrophy of the cellular elements.

The inferior thyroid arteries were much enlarged; the superior normal.

The carotids were elongated and their walls abnormally thin; the canal of the right one was considerably enlarged.

CASE IV.—*Exophthalmic Goitre without increased pulsation of carotids or any cardiac symptoms.*

The following case came under my care a few days ago, and, though I have only seen the patient once, it appears to me to be of sufficient interest to deserve a short record. Miss D., aged 26, was sent to me by Mr. Wasdale Watson, on December 30, on account of goitre associated with exophthalmia. Both lobes and isthmus of the thyroid gland were enlarged. The eyeballs were slightly prominent, the conjunctiva showed above the iris, and she suffered from muscæ volitantes. There was no throbbing of the carotids; the pulse was 80 and fairly strong. The heart sounds were normal. The patient was in a fair state of general health. She told me that her appetite was seldom good, though occasionally craving. The menstrual function had not been disturbed at any time. There did not seem to be any family predisposition to this or any other disease.

III.—*Elephantiasis of the Leg.* By ARTHUR TREHERN NORTON. *Read January* 10, 1868.

A. B., a printer's compositor, 24 years of age, came under my care in the Out Patient Department at St. Mary's Hospital in February last (1867).

He stated that his right leg had commenced to enlarge ten years previously, when he was fourteen years of age, and had continued slowly to increase in size up to the time of his coming to the hospital. He also stated that he was unable to wear his ordinary trousers and so found it necessary to have a pair made with one leg considerably larger than the other.

It was omitted, unfortunately, to take the measurement of the limb, as at that time there was but little expectation of a decrease taking place.

The enlargement commenced abruptly below the knee, with an even tabulated surface, and terminated abruptly above the ankle, but overlapped that joint and rested upon the dorsum of the foot. The parts were dense, hard, and

scaly, but not much fissured. The enlargement caused no pain, but was productive of a sense of weight and fatigue, and became a considerable impediment to progression by striking against the sound limb when moved.

Iodide of potassium was administered, and the bowels were kept constantly relieved by mistura alba (Hospital draught of sulphate and carbonate of magnesia). A bandage was applied, moistened with water, and drawn as tightly as the hand could conveniently draw it, and the patient was advised that if he should be in pain, or if the foot should become swollen or discoloured, he should at once loosen the bandage or apply to me. No such inconvenience, however, occurred, but the limb commenced slowly to soften and decrease in size. The patient continues to wear the bandage, but the limb is now, after ten months' treatment, about the normal size. I do not place much credit to the use of the iodide in this case, but consider the result was due almost entirely to the mechanical appliance acting as a therapeutic agent in promoting absorption. The patient is present this evening that he may be inspected by the Members of the Society.

IV.—*Four Cases of Vascular Ulcer of the Cornea, recently treated by Seton in the skin of the Temporal region.* By W. Spencer Watson. *Read January* 24, 1868.

Case I.

A PALLID, sickly child, of 5 years of age, was brought to the Central London Ophthalmic Hospital in May 1867, with phlyctenular ophthalmia of both eyes, associated with great photophobia and lacrymation.

Internal remedies, with belladonna lotion and blisters to the temple, were tried for several weeks without any effect.

On June 5 the right cornea had an ulcer with a vascular surface at a little below the centre. This had for several weeks increased in irritability and vascularity, and at the same time the intolerance of light was unabated. During the time that the blisters had remained open, there had been some amelioration of the symptoms; but now the state of the eye was in a worse condition than ever.

June 5.—A seton, consisting of a double ligature thread, put into the skin of the right temple.

10.—The ulcer has much improved in appearance. There is now no intolerance of light. A free discharge of pus from the track of the seton.

21.—The seton removed in consequence of a very free escape of blood from its openings. When squeezed a clot of blood escaped from the cavity left by the seton. There is very little photophobia.

24. No photophobia. The ulcer healing, and free from vascularity.

July 3.—Ulcer quite healed, leaving a very faint nebula. Sinus caused by the seton healed.

Remarks.—One of the occasional inconveniences of the use of the seton is seen in this case, viz. the subcataneous hæmorrhage. This has occurred to me in one other case, but I have in both instances found a firm compress with a bandage has served to check an inconvenient flow of blood.

The rapid improvement, after the free suppuration had been established in this case, was very remarkable.

Case II.

A child of 5 years of age came to the Hospital on August 1, 1867, with a vascular ulcer near the margin of the left cornea, which had existed for some months. According to the mother's account the eye had been inflamed eight months. There was intense photophobia.

Aug. 14.—Various internal and other remedies having been tried, and the ulcer remaining in statu quo, and the photophobia being unabated, a seton was put into the left temple.

Sept. 10.—For some weeks there was little improvement, and even now the photophobia is still very severe, but the ulcer has healed, and there is no longer a vascular surface on that part of the cornea corresponding to it.

Oct. 2.—The seton has cut its way out. Still great photophobia.

Remarks.—I lost sight of the patient after the last date, and I am therefore somewhat uncertain as to the ultimate result of the case; but the fact that the ulcer healed during the treatment was clearly ascertained. The intolerance of light, however, was not relieved, and whether this was due to other disorders of the health associated with the disease in the cornea or no, I am unable to say; but it is well known that in children ascarides often give rise to this symptom

without any corneal lesion, and this was probably the case with this patient.

Case III.

A child of 6 years of age had had an ulcer of the left cornea for three or four months when brought to the Hospital on November 29, 1867. Besides the ulcer, which was vascular, there was general keratitis, the greater part of the corneal tissue being cloudy. He has been under treatment for some time, and temporary improvement has followed the use of blisters, but a relapse has occurred as soon as the blister has healed.

A seton was put into the skin of the left temple on November 29.

Dec. 11.—Ulcer healed. The patient is quite free from photophobia and pain. An opacity remains in the central region of the cornea.

13.—Seton removed. Cornea quite free from vascularity and irritation.

Remarks.—The rapid improvement of all the symptoms in this case was very marked, and more particularly noticeable from the great length of time during which the disease had resisted all other treatment.

Case IV.

A boy of 6 years of age, who was just recovering from small-pox, came to the Hospital, at the end of October 1867, with severe keratitis of the right eye, and an ulcer on the cornea. This ulcer was at first only slightly, if at all, vascular, but it was from the first associated with great photophobia.

In the course of a month the whole cornea became cloudy, the ulcer vascular, and the photophobia and irritability became more intense. On Dec. 4, 1867, a seton was put into the right temple. There was a rather free escape of blood from the punctures, and the track of the thread swelled up rapidly. A compress and bandage were therefore applied over the part.

Dec. 6.—The appearance of the cornea is rather worse than before, and it looks very much as if it would slough at the upper part. The whole surface is dull and swollen, and a patch of vascularity at the lower and inner part has spread in area.

11.—The seton is now discharging pus freely. The

cornea has cleared and the ulcer healed. There is less photophobia.

16.—No remains of the vascular ulcer. Seton removed.

18.—The only trace of the ulcer is seen in a leash of very minute vessels, which can be seen with difficulty in certain positions of the cornea. There is no photophobia, and the greater part of the cornea is transparent or very slightly nebulous.

An abscess remains in the site of the seton, in consequence of the lower puncture having closed. The pus escapes freely from the upper orifice.

Remarks.—The rather free venous hæmorrhage immediately on passing the seton is a very unusual occurrence, but is a complication which must occasionally be met with. The improvement of the state of the cornea was not manifest for some days after the seton had been passed, but the very rapid change that occurred as soon as free suppuration in the track of the seton was established was very marked.

The cases of keratitis following small-pox do not, as far as my experience goes, often end in vascular ulcers of the cornea. The more common result is deposit of pus between the layers of the cornea and in the anterior chamber. This, therefore, is perhaps an exceptional case in that respect, but the result shows that the treatment by seton may be as efficacious as in the less severe forms of ulcer following phlyctenular ophthalmia. I have now seen a considerable number of cases of keratitis treated by this method at the Royal London Ophthalmic Hospital and at the Central London Ophthalmic, and I believe that in such cases as resist the usual remedies it is a resource of the greatest value.

I have detailed notes of thirteen cases, in all of which decided improvement in the state of the cornea followed the application of the seton. In some others I have been unable to follow up the cases long enough to ascertain the result.* I do not bring the cases forward as novelties, because the treatment of such cases by this method has been long practised by ophthalmic surgeons, but simply to draw attention to a most valuable remedy for a most intractable and sometimes most destructive disease of the eye.

* In one case of severe keratitis dependent upon acute granular ophthalmia, benefit was obtained by the use of the seton; and in a case of phlyctenular ophthalmia, without vascular ulcer, but with great irritation and photophobia of long standing, temporary benefit was obtained from the same remedy.

V.—*Two Cases of sudden Death from the Nerve Centres, in Rheumatic Fever, with excessive Temperature before Death.* By HERMANN WEBER, M.D. *Read January* 24, 1868.

THE cerebral affections, functional and organic, connected with rheumatic fever still offer many points for careful examination. They are evidently not all of the same nature. The two cases which I bring before the Society belong to that class which is perhaps the most obscure, on account as well of the nature of the symptoms, as of the sudden and unexpected manner in which they develop themselves.

Dr. Sydney Ringer* has quite lately, in an excellent paper, described several cases of this kind, and they are probably not so rare as it might appear, being probably identical with the 'rheumatic apoplexy' of Stoll, and with the 'rhumatisme cérébral ataxique' and 'apoplexie rhumatismale' of some French authors. Amongst others, Vigla,† Cossy,‡ Thore fils,§ Gubler,‖ Lebert,¶ and Tüngel** of Hamburg, have likewise contributed several valuable papers on the cerebral complications in rheumatic fever, and more lately Kreuser†† of Würtemburg. The older communications do not contain any exact account of the temperature, but Kreuser and Ringer distinctly describe the remarkable rise during the last hours of life. Drs. Stewart and Sanderson have likewise carefully

* On some fatal cases of Rheumatic Fever, accompanied by a very high Temperature of the Body, namely 110° to 111° F. By Sydney Ringer, M.D. 'Medical Times and Gazette,' 1867, vol. ii. p. 378.

† Observations suivies de réflexions, pour servir à l'histoire des complications cérébrales dans le Rhumatisme articulaire aigu. 'Archives gén. de Méd.' 1853, vol. ii. Juillet.

‡ Mémoire pour servir à l'histoire de l'anatomie pathologique du Rhumatisme articulaire aigu, et à celle des cas de mort rapide et imprévue, survenant dans le cours de cette affection. 'Archives gén. de Méd.' 1854, vol. i. p. 286.

§ De la Méningite rhumatismale. 'Gaz. des Hôpitaux,' 1856, p. 522 and p. 526.

‖ Études et observations cliniques sur le Rhumatisme cérébral. 'Archives gén. de Méd.' 1857, vol. i. p. 257.

¶ Ueber die im Verlaufe des acuten Gelenkrheumatismus auftretenden Zufälle von Seiten des Gehirns oder des übrigen Nervensystems, mit meist tödlichem Ausgange etc. 'Prager Vierteljahrschrift,' vol. lxviii. p. 1, 1860.

** Klinische Mittheilungen von der medicinischen Abtheilung des Allgemeinen Krankenhauses in Hamburg. By Dr. C. Tüngel. (From the years 1858–59 and 1860.)

†† Kreuser. Die Complicationen des acuten Rheumatismus. 'Med. Correspondenzblatt des Würtemberg. ärztlichen Vereins,' No. 14; and 'Jahresbericht der gesammten Medicin von Virchow und Hirsch,' Jahr 1866, vol. ii. p. 269.

observed a case, which, we trust, will be brought before the Society.

Case I.

Summary.—Rheumatic fever in a man of 45: ordinary severity up to twelfth day, then signs of endocarditis, increased restlessness, deafness and noises in the head, excessive micturition; on thirteenth violent delirium and vomiting, rapidly followed by coma and excessive rise of temperature (109·5° F.), and all the phenomena of intense pyrexia. Death five hours from the commencement of the delirium. Rapid decomposition after death.

T. P., æt. 45, a man of nervous disposition, short and rather fat, enjoyed in general good health; had had a mild attack of rheumatic fever without heart affection, under the care of Dr. Cleveland, about fifteen years before death; had had anxiety in business during the last two years of his life, and had catarrh in the head, throat, and bronchi from the end of September 1867. The rheumatic affection of the joints set in on October 14, but he was confined to bed only from the 17th; he was attended by Dr. Cleveland, who treated him with alkaline saline draughts, anodynes at bedtime, and, on account of constipation, with one or two moderate doses of calomel with colocynth pill. On October 19, the sixth day of the rheumatic complication, I saw the patient together with Dr. Cleveland, when we found a painful but moderate swelling of several joints, a profusely perspiring skin, and, in short, nothing different from a usual attack of rheumatic fever. The urine was passed in normal quantity: it was rather high coloured, neutral, clear, of a specific gravity of 1022, free from albumen and sugar. The temperature at 9 P.M. was only 101·4° F., the pulse 88, the heart sounds normal. Sleep at night much disturbed, but he had frequent short sleeps during the day.

The treatment consisted in scruple doses of bicarbonate of soda and nitrate of potash, four times a day, and a $\frac{1}{4}$ gr. of morphia at bedtime; about 6 ounces of brandy per day, and beef tea and lemonade according to desire. The joints affected were dressed with wadding and laudanum fomentations. There was no change of importance up to the 22nd, when the left shoulder and elbow were the principal joints complained of; the urine then was slightly alkaline, the pulse at 5 P.M. again 88, the temperature 102·5° F.

Treatment.—Alkaline mixture only three times; $\frac{1}{2}$ gr. of

morphia at night; blisters to the left shoulder and elbow (about 36 square inches in all).

On the 23rd the pain in the shoulder and elbow was diminished, but there was much pain and stiffness in both wrists and fingers. Urine alkaline, clear, free from albumen. Heart sounds normal. At 5 P.M. pulse 86, temperature 101·8° F.

Treatment.—Two small blisters above the wrists; 5 grs. of quinine twice a day, ¼ gr. of morphia at bedtime.

Oct. 24.—Night restless, principally from pain; in the morning much depressed, but during the day more cheerful. Urine neutral, about 3 pints in twenty-four hours. At 5.30 P.M. pulse 88, temperature 101·8° F. Treatment as above, without any fresh blisters.

25.—The night again restless; the joint affection scarcely altered, but there was a decided change in the first sound of the heart, which was very long and soft near the apex, a circumstance which had been independently observed in the morning by Dr. Cleveland. The patient was greatly troubled by itching of the skin on the chest, which was ascribed to the presence of sudamina, with a red basis. There was a constant noise in the ears, with some amount of deafness. There was also a great increase in the quantity of urine since the morning (amounting to about 80 oz. within twelve hours); it was pale and slightly alkaline without albumen or sugar; sp. gr. 1018. At 6 P.M. pulse 84, temp. 102·2° F. The bowels were moved very freely, without medicine, in the course of the afternoon.

Treatment.—To omit the quinine and the morphia.

During the first part of the following night he was very restless, drank much water and lemonade, had another very copious motion, and passed over 4 pints of pale and alkaline urine, of 1020 sp. gr., without either albumen or sugar. At 4 A.M. October 26, he for a moment did not recognise the nurse, but immediately afterwards he spoke rationally, and was more quiet from 5 till after 7 o'clock, when he suddenly started up in bed, and endeavoured to jump out of it, was violent, and repeatedly vomited large quantities of yellowish fluid; but almost immediately afterwards he fell back in the bed, and muttered indistinctly for a short time, and then became silent, breathing heavily. At 8 A.M., when Dr. Cleveland arrived, he was already in profound coma, with a rapid pulse, stertorous breathing, and contracted pupils. At 9.25 A.M. I found the pupils no longer quite contracted, but of rather less than medium size, and immovable, the pulse 125,

each beat peculiarly distinct and hard; respir. 42; temper. in the axilla 108° F., the face red, the head hot, the skin of the whole body warm and perspiring, but without reaction to the strongest mustard poultices; reflex action not quite destroyed but very slight. The head was shaved, and strong acetum cantharidis freely applied to it, but the blistering effect was very slight.

At 10.10 A.M. pulse 140; respir. 50; temp. 109·5° F.
At 10.40 A.M. „ 140; „ 60; „ 108·8° F.

The face and body became gradually more livid, the breathing irregular, and death occurred at 10 minutes before noon. The temperature was not measured at the time of death, but at 2h. 15m. it was still 105·5°F. in the axilla, although the body had been covered only by the shirt, and a light linen sheet. The body remained in a cold room, but the decomposition was so rapid that the coffin had to be closed within twenty-four hours after death.

No post-mortem inspection was made, but soon afterwards I had to attend a very similar case which led to an examination after death.

Case II.

Summary.—Rheumatic fever in a man of 25; ordinary severity, but great depression of spirits. On the twelfth day, signs of endocarditis, deafness, increased micturition and action of bowels; on the thirteenth, violent delirium, rapidly followed by coma and great rise of temperature; death three hours after commencement of delirium. Rapid decomposition after death, fluid state of the blood, ecchymotic spots underneath pericardium, pleura, and in the tissue of the lungs, as also on liver and kidneys.

E. R., a robust looking man of 25, never had rheumatism before; had been subject to mental anxiety during the last six months; had, three weeks before death, suffered from angina tonsillaris, but recovered almost entirely within a week, with the exception of a slight bronchial catarrh. Thirteen days before death he was seized with pain and swelling, first in the left knee, then in other joints; but was not under regular treatment, and took no medicine until ten days later, when I found several joints very painful, but only moderately red and swollen, much perspiration, but nothing unusual from an ordinary though rather severe case, in either the heart or any other organ and function, excepting, perhaps, a great degree of restlessness and mental depression.

At 9 A.M. pulse 86; temp. 103·4° F.
At 5 P.M. „ 88; „ 102·8° F.

The treatment consisted in four blisters above the affected joints, and ¼ gr. of morphia at bedtime.

On the following day (the eleventh), he expressed himself better, and was less depressed. The patient had a great dislike to medicines, and to opiates especially; the treatment, therefore, consisted simply in rest, a moderate amount of support, and a solution of ½ drachm of chlorate of potash to be taken during the twenty-four hours.

At 9 A.M. pulse 84; temp. 102·2° F.; respir. 22.
At 8 P.M. „ 88; „ 102·8° F.

On the morning preceding death (the twelfth from the commencement of joint affection), the first sound of the heart was replaced by a soft bruit near the apex; several joints were moderately swollen and painful. Skin moist, on many parts covered with sudamina, causing some degree of itching.

At 9.30 A.M. pulse 92; temp. 103·2° F.; respir. 26.
At 5 P.M. „ 90; „ 103·4° F.; „ 22.

Treatment.—Linseed poultices to the region of the heart and to the affected joints. The air of the room was ordered to be kept at or below 62° F., but it was never found under 70° F., and always very close, owing to some prejudice of the attendants. At 9 P.M. the patient began to pass very large quantities of pale, slightly alkaline urine, of 1016 sp. gr., without either sugar or albumen; he was very thirsty; he did not hear so well as before. During the night he often passed urine, and had two semi-fluid motions; he was very restless; talked loudly during sleep, but was rational when awake; at 5 A.M. he was drowsy, the registering thermometer then placed in the axilla, by the nurse, indicated 106° F.; at 5.15 he became suddenly violent, jumped out of bed and fell on the ground; the loud delirium soon passed into a muttering one, and a few minutes later he began to breathe heavily, at first moving about his limbs, but soon becoming perfectly quiet, and he died in less than three hours from the commencement of the delirium. I arrived immediately after his death, when the body was quite warm and covered with perspiration; the temperature in the axilla ten minutes after death was 107·8°F., and in the rectum 109·8° F., and three hours later in the axilla 98·8° F., and in the rectum 106·2° F.

Post-mortem examination twenty-three hours after death.

Although the temperature of the room did not exceed 48° F., the decomposition was far advanced, the face and scalp being livid and swollen. The left knee and right elbow (the joints last affected) were still enlarged, but no further examination of them was permitted. The pia mater was much congested, and there were several small patches of extravasation of blood near the chiasma and the Sylvian fossa of either side; the brain itself was likewise much congested, and moister than usual, the sections exhibiting many red points, which were especially numerous and large in the right corpus striatum and thalamus and either crus and in the pons. The fourth ventricle and the cervical portion of the spinal marrow were likewise congested. The pericardium was healthy, excepting some minute hæmorrhagic spots near the base of the heart; the ventricles and auricles of either side filled with almost fluid very dark blood; the mitral valves and endocardium around them slightly thickened, and rough from the deposit of fresh fibrin; the aortic valves and those of the right side unchanged. The lungs were moderately congested in the upper, and much so in the lower lobes, where they were also slightly œdematous, and exhibited ecchymotic spots in the tissue, as well as underneath the pleura. The spleen enlarged and rather pulpy. The kidneys and liver normal excepting some small fresh hæmorrhagic spots beneath the lining membranes.

No minute examination of any organ was made, owing to the unfavourable circumstances under which the post-mortem inspection was permitted.

The two cases greatly resemble each other in many respects, and in their most prominent points also those described by Dr. Ringer and Dr. Kreuser.* They were both apparently of moderate severity up to a short time before death. The first indications of complication were a slight change in the first sound of the heart, a great degree of restlessness, an excessive increase in the flow of urine, a tendency to diarrhœa, some amount of deafness and noise in the ears, when suddenly supervened, with or without vomiting, violent delirium speedily passing over into coma, accompanied by greatly accelerated stertorous breathing, a frequent, quick, hard pulse, and an excessive rise of temperature; the pupils having been at first contracted, then of medium size, but immovable. Death followed the occurrence of the delirium in three and five

* I have, unfortunately, not yet been able to obtain the original of Dr. Kreuser's communication, and base my statement only on the abstract contained in Dr. Fräntzel's Bericht in 'Virchow und Hirsch's Jahresbericht' for 1866.

hours. The decomposition after death was in both cases very rapid. The post-mortem examination, performed only in one of the cases, exhibited traces of endocarditis, congestion of the lungs, enlargement of the spleen, and congestion of the brain and its membranes, with minute ecchymotic patches in the pia mater, in the pericardium, endocardium, and other organs, the blood being very dark and exhibiting only an imperfect tendency to coagulation.

More or less suddenly, then, the action of the brain after a short stage of excitement became paralysed, while the temperature of the body and the action of the organs of circulation and respiration manifested the characters of the most intense pyrexia. The immediate impression made upon us by these cases, was that these phenomena of intense pyrexia, as symptoms of rapid chemical changes, were not the cause of the brain paralysis, but the effect of the latter, and this view seems to be in accordance with some pathological facts and experiments.

A similar elevation of temperature has been, as far as I know, only met with in cases of death from the nervous centres.* Wunderlich† has published very valuable cases of this kind, not, it is true, of sudden death from the brain in rheumatic fever, but of the excessive ante-mortem, and also post-mortem, rise of temperature in death from tetanus and other fatal neuroses, or diseases of the nerve centres without palpable anatomical lesions, sufficient to explain the phenomena. The excessive rise of temperature in these cases did not occur until the brain functions were already fatally implicated, and the temperature in several instances continued to rise for some time after death. Here, too, as in the two cases before the Society, the post-mortem decomposition was remarkably rapid.

It is impossible not to be reminded by the morbid phenomena under consideration of those of heat-stroke,‡ as

* Here may be mentioned the observation of the late Sir Benjamin Brodie, who noticed, in a case of laceration of the cervical marrow, a temperature of 111° F. at the time of death. 'Med.-Chir. Trans.' vol. xx. p. 118–164, 1837.

† *a.* Bemerkungen bei einem Fall von spontanem Tetanus. Von C. A. Wunderlich. 'Archiv für Heilkunde,' vol. ii. p. 547. 1861.

b. Ein weiterer Fall von post-mortaler Temperatursteigerung bei einem Tetanischen. Von C. A. Wunderlich. 'Arch. für Heilkunde,' vol. iii. p. 175. 1862.

c. Ueber die Eigenwärme am Schluss tödlicher Neurosen. Von C. A. Wunderlich. 'Arch. für Heilkunde,' vol. v. p. 205. 1864.

‡ A case, probably belonging to this class, occurred at the German Hospital in the summer of 1866, for the notes of which case I am indebted to Drs. Bäumler and Burger: 'F., aged 20, a sugarbaker, was quite well on the morning of June 29;

described by Longmore, Barclay, and other authors. The pathology of this disease is likewise still obscure, and the investigation of its real nature may materially contribute to the elucidation of the cause of death in such cases as ours. Accurate thermometric observations are wanting, but all the authors describe the skin as intensely hot, and some mention especially the continuance of the high temperature of the body for an unusually long period after death.

I will not venture to occupy the time of the Society by mentioning the numerous communications which treat of subjects more or less related to the questions under our consideration; but I cannot forego referring to a very instructive paper by Erb * on the rise of temperature during the last hours of the fatal termination of diseases of the central nervous system; to various original essays by Liebermeister † on the effects of abnormally high temperatures of the body; and to the experiments of Tscheschechin ‡ on animal heat. The most important experiment of the latter is the section of the pons

whilst working in a very hot room, saturated with moisture, he suddenly fell down unconscious at 4 P.M., and was taken immediately to the hospital. Dr. Burger found the face pale, the muscles relaxed, the breathing stertorous, the pupils contracted, the skin excessively hot, the temperature in the axilla being at 6.10 P.M. 109·2° F. The body was then assiduously washed with ice water, and ice applied to the head; the temperature in the axilla had decreased to 108° at 6.30 P.M., and at 6.35 P.M. it was 108·4° in the rectum. At that time he was placed in a bath of 80° F., and cold water was poured over the head. At 7.20 P.M. the temperature in the rectum was only 105·7° F., the pulse 150, the pupils rather wider than before, the coma unchanged. A large quantity of mucus was discharged from the bowels, at first of light yellow colour, afterwards tinged with blood. The urine taken from the bladder was free from albumen. The temperature gradually sank, and was at 10 P.M. only 102·4° F. in the axilla. The patient died soon after midnight. Post-mortem examination at 11 A.M. on June 30: Body rigid, surface of livid colour. Brain rather moist, otherwise healthy, veins congested. Lungs congested, interstitial ecchymoses. Right side of heart filled with fluid blood, left empty; fibres of heart granular, striation rather rough. Spleen rather large, not soft, Malpighian corpuscles numerous. Kidneys congested, otherwise normal, epithelium granular. Many small ecchymoses in the mucous membrane of the stomach. Contents of intestines greyish red; solitary and Peyer's glands somewhat swelled. Liver rather large and firm, containing much finely granular fat. Dr. Bäumler, I ought to add, at once suggested the analogy between heat-stroke and cases like those before us.

* Ueber die Agoniesteigerung der Körperwärme bei Krankheiten des Centralnervensystems. Von Dr. Erb. 'Deutsches Archiv für Klin. Medicin,' vol. i. p. 174. 1866.

† *a.* Ueber die Wirkungen der febrilen Temperatursteigerung. Von Professor Dr. Liebermeister. 'Deutsches Archiv für Klin. Med.' vol. i. p. 298 and p. 543. 1866.

b. Klinische Untersuchungen über das Fieber und dessen Behandlung. By the same. 'Prager Vierteljahrschrift,' vol. lxxxv. and vol. lxxxvii.

‡ Zur Lehre von der thierischen Wärme. Von Dr. Tscheschechin in Russland. Reichert and Du Bois Reymond's 'Archiv für Anatom. und Physiol.' 1866, p. 151.

just at its junction with the medulla oblongata, the immediate result of which is an acceleration of the contractions of the heart and of the respiratory movements, and an elevation of the temperature of the body. Within two or three hours these symptoms increase in intensity, and the animals present all the phenomena of pyrexia or fever. There is, it appears to us, some analogy between this experiment and the morbid process in our two cases, viz.: that the regulating influence of the brain is removed in the former by the experimenter, in the latter by a pathological cause, while the centres of the heat-producing chemical processes, situated in the spinal marrow and ganglionic system, deprived of this regulating influence, act in a disordered manner.* The stimulus given to the chemical processes evidently extends its influence beyond the cessation of the heart's action; hence the long continuance of the abnormally high temperature for several hours after death, and the very rapid decomposition of the body.† The question as to the cause of the sudden paralysis of the brain must, I fear, remain unanswered for some time. It is true that the post-mortem examination exhibited in one case a high degree of congestion of the brain; but it remains unknown how it was produced. We have heard much of retrocession of the joint affection, but there was certainly no retrocession in our cases, nor in those of Dr. Ringer, nor in those of Lebert or Tüngel. The possibility of multiple capillary embolism had suggested itself to me, on account of the signs of endocarditis during the last day of life; but this would not explain the occurrence of analogous phenomena in Wunderlich's, Liebermeister's, and Erb's cases. We are rather inclined to the view that in acute rheumatism, and in other febrile diseases where the nervous centres are severely taxed by pain and sleeplessness, they may become more or less suddenly exhausted, and especially their heat regulating centres. In this respect it is not unimportant that both patients had been subject to great mental uneasiness during many months preceding their fatal illness, and that in both cases the most striking features were restlessness and an

* There is something similar in other spheres of the nervous system; as certain kinds of convulsions, involuntary movements, and excessive reflex actions, likewise appear to be caused by the temporary paralysis of the brain functions.

† This fact has also been observed in Wunderlich's cases of tetanus, with excessively high ante-mortem and post-mortem temperature, and is likewise mentioned in several of Tüngel's and of Liebermeister's cases, and Dr. Bäumler has likewise met with it in a case of sudden death from rheumatic fever, which occurred amongst one of his out-patients at the German Hospital.

anxious expression of countenance. It appears to us very doubtful that the unexpected supervention of the fatal affection of the nerve centres with the remarkable rise of temperature, and the other phenomena of excessive fever, is peculiar to rheumatic fever; the occurrence, though very rare, of a similar termination in other acute diseases—as shown by some of the observations of Wunderlich and Liebermeister—and the great analogy with the phenomena witnessed in heat-stroke, render it much more probable that the same morbid processes may be excited also in other diseases, and even without the existence of any previous disease, by a concurrence of external influences and internal predispositions.

Some authors, especially Lebert, are in favour of the theory that, in acute diseases, under peculiar circumstances, an animal poison is developed, which causes paralysis of the nerve centres; but there are, as yet, no facts before us to prove such a view. With regard to uræmia, Dr. Ringer has clearly shown that it has nothing to do with the phenomena under consideration, and my own observations are altogether in corroboration of his. It is much more difficult to dispose of Liebermeister's view, that the high temperature of the body is the cause and not the effect of the more or less sudden paralysis of the nerve centres. This excellent observer has done much to demonstrate that a very high temperature of the blood is in itself sufficient to derange and paralyse the functions of the nervous system; but it appears to us evident, that in disease, under ordinary circumstances, the temperature of the blood—owing to the different regulatory apparatuses of warm-blooded animals—cannot be raised to such excessive degrees without a previously effected derangement of the heat producing and regulating nerve centres. Very high temperatures of the surrounding medium, especially when the heat is combined with moisture, may, it is true, cause a rise in the temperature of the blood by the accumulation of the heat constantly produced within the body, and thus ultimately lead to heat-stroke; but even here it remains as yet uncertain whether the more or less sudden manifestation of brain symptoms is due to the heat of the blood, or whether the exhaustion of the over-worked regulatory apparatuses and their regulating centre (probably situated in the brain or medulla oblongata) precedes the enormous rise of temperature. However this may be, there was no sufficient cause of this

kind in our cases, although the sick rooms were kept too warm. In one of Ringer's cases the patient was regarded convalescent, and was on the point of leaving the hospital when the fatal symptoms set in; it is therefore not likely that the heat of the blood was very high at the time, but it appears to us more probable that the temperature rose in a comparatively short time to the excessive degree in consequence of the derangement of the nerve centres. In our own cases, the temperature at the last visits, between twelve and thirteen hours before the supervention of the brain symptoms, was by no means very high, yet there were present already those other symptoms pointing to derangement of some part —probably the vaso-motor—of the nervous system, as the excessive flow of urine, the tendency to diarrhœa, the noise in the ears and deafness, and the increased restlessness, which symptoms may be of a truly premonitory nature.

It is evident that these and similar cases possess great interest with regard to the physiology of animal heat and pyrexia, and that it is necessary towards the solution of many important questions, that the temperature should be frequently examined, especially at the appearance of such premonitory symptoms, and that, at the same time, the condition and progress of the functions of the brain and of the systems of respiration and circulation are carefully noted. The temperature at the moment of death, and for some hours after its occurrence, is also of importance. An accurate sphygmographic examination of the pulse may likewise assist in throwing light on these obscure conditions, and, coupled with a watchful observation of the state of temperature and of the other symptoms pointing to the derangement of the nerve centres, lead to a more early recognition of the great danger.

With regard to treatment, it is necessary that the nervous and restless cases of rheumatic fever and other febrile diseases should be most carefully watched, that they should be kept rather cool, and be soothed, if they bear it, by opium in liberal doses, and otherwise according to general principles; but as soon as the temperature should begin to rise unusually high, or any other of the premonitory symptoms of a profounder derangement of the nervous system appear, rousing of the nerve centres and abstraction of heat by the cold bath, by cold affusions, or by the cold wet sheet, would be the most promising plan. We ought not to be guided by

the name of the original disease, be it rheumatic fever, or typhus, or erysipelas, or scarlet fever, but by the vital condition of the patient; the danger comes from the increasing depression of the nerve centres, the rapidity of chemical changes and the consequent excessive production of heat. If once the temperature be risen to 108°F.,* all efforts will probably be useless, but in minor degrees of heat and nervous depression we know that by the repeated use of the cold bath, the cold affusion, and the cold sheet, we are able to remove a certain degree of stupor, and to lower the internal temperature, and thus afford also a chance to other remedies, amongst which large doses of quinine deserve especial consideration.

I beg to draw attention to the following cases bearing on the same subject, which were related by Dr. Murchison and Dr. Sanderson during the discussion.

VI.—*Cases of Acute Rheumatism with extremely high Temperature before Death.*

Case I. By Charles Murchison, M.D.

HENRY P., aged 28. Shopman in a cigar shop; admitted into Middlesex Hospital, under Dr. Murchison, on September 13, 1866, on eleventh day of first attack of rheumatic fever.

On admission, pulse 120; respiration 28; temperature 102·2° F. Moderate swelling and very severe pain in all of joints. Profuse acid sweats. Cardiac signs normal. Urine high coloured, very acid, sp. gr. 1028, no albumen.

Sept. 17 (fifteenth day).—Had much delirium in the night, and to-day is very heavy, deaf, and stupid. Takes

* We have ourselves never seen recovery after a rise of the internal temperature to or above 107·6° F., with the single exception of a case of quartan ague, where the heat in the axilla, in the beginning of the hot stage, was 107·8° F.; but ague differs from the other febrile diseases, as already pointed out by Liebermeister and others, by the short duration of the febrile attacks, and by the more vigorous condition of the nervous system, which during the free intervals is greatly restored.

little notice, and will only put out tongue when spoken to loudly. Pulse 132; faint pericardial friction. Respirations 48, and irregular. Coarse moist râles over back of chest. Tongue dry and brown; sordes on teeth. Temperature $105\frac{4}{5}°$ F.; perspiration much diminished, and apparently no pain caused by moving joints.

18, 11 A.M.—Incessant muttering delirium; subsultus, tremors, and floccitatio. Has not slept for forty-eight hours. Pulse 144; respiration 44. Dullness, with feeble breathing and coarse moist râles at bases of lungs. Temperature 107° F. A miliary eruption over face, neck, and trunk. Urine sp. gr. 1025, acid, loaded with lithates, but containing no albumen. Tongue still dry and brown.

4 P.M.—Violent spasmodic movements of whole body. Respirations semistertorous. Temperature 110·2° F. Died at 5 P.M.

Autopsy twenty-one hours after death. Body undergoing rapid decomposition. Blood dark and fluid, with claret-coloured staining of lining membrane of heart and large arteries. Spleen large and diffluent. Both kidneys enlarged and very hyperæmic, and the uriniferous tubes gorged with granular epithelium. No morbid appearance in the brain, but the veins and sinuses full of dark fluid blood. Extensive hypostatic congestion of both lungs. A small quantity of recent lymph on surface of heart, and about half an ounce of turbid fluid in pericardium. Muscular tissue of heart pale, flabby, and very friable, and under the microscope presenting the appearances of granular degeneration.

CASE II. By CHARLES MURCHISON, M.D.

Ellen B., aged 26, was admitted into the Middlesex Hospital, under Dr. Murchison, on July 23, 1867. She was married at nineteen and was the mother of six children, the last having been born three months before, and having died the day before the patient's admission of diarrhœa. The patient had been very badly off for some time, and had no milk with which to nurse her child. Four years before she had been confined to bed for six months with rheumatic fever, and had suffered severely from palpitation. Her second attack of rheumatic fever commenced three days before admission.

At the time of admission, there was considerable swelling and moderate pain in most of the joints. Pulse 96. Cardiac

impulse increased, but no bellows murmur or pericardial sound. Skin hot and very little perspiration.

July 24.—Slight pericardial friction and irregularity of the heart's action.

27.—Has scarcely slept since admission, and last night was occasionally delirious.

30.—Delirium has not returned, but still has scarcely slept since admission. Temperature 104·5° F.; pulse 108; respirations 30.

31.—Slept about an hour after opium last night, but after that became violently delirious, and was with difficulty kept in bed, and is now almost unconscious. Tongue dry and brown down the centre. Motions and urine passed in bed. No perspiration, but has copious miliary eruption over chest and abdomen. Pulse 120; respirations 32, irregular; temperature 105·3° F.

Aug. 1.—Patient gradually became more unconscious, and died at 3.30 A.M. this morning. The temperature was not taken during the last twelve hours of life.

Autopsy twelve hours after death. Body far advanced in decomposition. Muscular tissue of recti abdominis presents in a marked form Zenker's waxy degeneration, with numerous minute extravasations of blood. Blood dark and fluid, with staining of lining membrane of heart and of large arteries. Moderate hypostatic congestion of both lungs. Spleen large and pulpy. Both kidneys hyperæmic, and tubes full of granular epithelium. No lesion in brain except that veins and sinuses are full of dark fluid blood. About an ounce of turbid fluid in pericardium, and a slight roughening from recent lymph over auricles and origin of great vessels.

In the first of the preceding cases, the treatment was purely expectant; the second patient was treated on the alkaline method.

Case III. By J. Burdon Sanderson, M.D.

E. C., aged 45, unmarried, admitted into Middlesex Hospital, August 21, 1867.

Antecedents.—Seven years ago suffered from so-called neuralgic pains of the face and neck, for which she was a patient in this Hospital. With this exception has had good

health. Catamenia, which were regular till a few months ago, have since ceased. Never had rheumatism.

History of present illness.—On August 10, she got cold and had a 'swollen face,' but was otherwise very slightly indisposed. About the 17th she first felt pain in one ankle which soon began to swell.

On admission, she complained of pain in both ankles and wrists; there was profuse perspiration, great thirst, and anorexia. Tongue moist, slightly furred; pulse 120; respirations 22. She was ordered twenty grains each of the nitrate and bicarbonate of potash every four hours.

Aug. 22.—The frequency of respiration has increased to 46, while the pulse has diminished to 112. The inspiratory movement is sudden; the patient is very drowsy, and says she wants to go to sleep, but replies promptly to questions. No cough or expectoration. On percussion, both posterior bases are found to be dull, the dullness being most extensive on the right side. The breath sounds are distant and imperfect, but there is no crepitation. She was ordered 3 oz. of brandy daily.

23.—Pulse 120; respiratory frequency increased to 56. Joints neither painful nor swollen; thoracic physical signs unaltered; specific gravity of urine 1020; temperature not observed. Ordered an effervescent ammonia draught, with excess of ammonia, every three hours; and linseed and mustard poultices to back.

24. 9.30 A.M.—The patient has had a quiet night and is still very drowsy. Urine has been passed in good quantity, and contains no albumen. She was again seen at 5 P.M. when it was observed that the skin was pungent and dry, and the general surface pale. The temperature was measured for the first time, and was found to be 109·4° F. The peculiarities of the respiratory movements before noticed were more marked; the expansion of the chest being sudden, the expiration also sudden and somewhat stridulous, and the pause prolonged. A sphygmographic observation * of the pulse was taken, of which the following is the tracing; fre-

quency 134, pressure of spring 120 grammes. The eyes were

* The pulse tracings represented here and elsewhere are photographic facsimiles.

closed, the pupils contracted, the iris having a tremulous movement. They were unaffected by light. At 6.30 the temperature was again measured and found to be 110·2° F., shortly after which the patient expired.

Post-mortem examination forty-four hours after death. General surface pale, with lividity of the dependent parts. On the arms, the superficial veins showed themselves as livid streaks. Thorax: The pericardium contains a small quantity of serum stained with blood. The heart is flaccid, and contains dark and perfectly fluid blood in all its cavities. Its internal surface and that of the aorta are deeply stained; its valves are perfectly healthy. Both lungs are soaked and hyperæmic at their bases, but otherwise healthy.

Abdomen: The liver is pale and smooth, both as to its natural and sectional surfaces. The kidneys are excessively congested, the spleen is soft and hyperæmic, and the mucous surface of the stomach deeply stained.

Encephalon normal.

The muscular substance of the heart was examined microscopically by Dr. Cayley. The muscular fibres were finely granular.

VII.—*Case of Femoral Aneurism.—Rupture of Sac.—Old Operation.—Recovery.* By J. Cooper Forster. *Read January* 24, 1868.

I WAS requested by Dr. John Tanner, on July 31, 1867, to see a tall thin man, aged 29, who lived at Pimlico, and was suffering from a pulsating tumor in the upper part of the left thigh. The patient gave me the following account of himself. He is married, has always enjoyed good health, and has been very active. About the beginning of April, whilst jumping, he felt a snap in his left groin, but took very little notice of the occurrence, and continued his ordinary occupation, which involved a good deal of walking, standing, and jumping. One month afterwards he went for a fortnight's holiday, when he walked a great deal. On his return, about the middle of May, he found a swelling in the upper part of the thigh, to which he applied iodine, and from that time the swelling commenced to increase in size. About this period, he began to complain of pain on the inner side of and in the knee-joint; he therefore applied to a surgeon, who advised a continuation of the iodine. He went on in this condition,

going about his occupation in pain, which was much worse at night, until the end of the first week in July, when he was compelled to take to his bed, owing to the intolerable agony he experienced at night quite unfitting him for any work. Iodine was still ordered to be applied to the swelling and hot fomentations to the knee. He was put upon low diet. After continuing in bed three weeks without improvement, he sought the advice of the former medical attendant of his family, Dr. Tanner, who immediately asked me to see the case.

I found a very distinct, globular, pulsating tumor about three inches across in each direction, occupying the greater part of Scarpa's triangle of the left thigh—the pulsation was synchronous with the pulse—the tumor could be almost entirely emptied by pressure above, on the external iliac artery, but there was some solid portion left. Upon careful examination there appeared an inch of femoral artery between the upper part of the swelling and the line of Poupart's ligament. The man seemed ill, partly owing perhaps to the low diet, and partly to the unbearable paroxysmal pain he suffered at night; indeed it was the pain that appeared to him of the greatest importance, and for which he desired relief; the swelling in the groin he thought would go down.

I at once ordered the patient good diet without stimulants, and tried to improve his general health by iron and relieve his pain by opiates, but felt unwilling to lose any time in the local treatment of the aneurism. Accordingly, on the second day of my seeing him—viz. on

Aug. 2—I began to apply pressure on the femoral and external iliac arteries alternately. Well knowing the necessity of personally superintending, if not actually applying pressure myself, I sat at the bed-side of this patient from 7.30 P.M. to 11.30 P.M., compressing these two vessels alternately with a weight of seven pounds or the pressure of my thumb, so as entirely to stop the passage of blood into the sac.

3.—I again applied perfect pressure for three and a half hours during the evening. The following day the patient begged to be relieved from the treatment, as the pain in the knee was very much abated.

5. 9.30 A.M.—I found a good deal of thickening about the aneurism, the contents of which were as fluid as ever; there was increased heat in the tumor in common with a general feverish condition, which precluded the idea of resorting to pressure again, at least on that day.

6.—No change.

7.—He continued in the same feverish condition; the tumor felt larger, softer, and more fluid; owing to the enlargement, the space between the upper part of the aneurism and Poupart's ligament was much diminished. There was evidently a change for the worse in his general and local condition. I therefore recommended immediate recourse to another measure, and proposed to deligate the external iliac artery. The patient was quite willing, but had promised to let his father know, who resided at a distance, if the vessel had to be tied. Thus more than twenty-four hours were lost.

8.—I requested a consultation with Mr. Hilton, and an appointment was made for 2 P.M. About an hour before we met, a messenger came to my house, stating that the sudden change had taken place, which I had warned the patient, if any delay occurred in my operating, would inevitably happen. Upon arrival at my patient's, and on examination with Mr. Hilton, it was evident the aneurism had become diffused; he stated that a strange sensation had come over the swelling—it had enlarged very much and become harder; pulsation was now exceedingly feeble; the anterior and posterior tibial arteries could not be felt beating.

From the account brought me by the messenger, I had come prepared to perform 'the old operation,' viz. of laying open the aneurism and tying both ends of the vessel; this plan of treatment was agreed to by Mr. Hilton, who gave me most valuable assistance during the proceeding, as also Messrs. Eastes and Eager. The latter gentleman having given chloroform, I placed a tourniquet on the aorta, the same which I had used when assisting Mr. Birkett in a parallel case, reported in the number of the Medico-Chirurgical Transactions for 1867, and recommended by Dr. Humble many years ago for compressing the abdominal aorta in cases of post-partum hæmorrhage; this was taken charge of by Mr. Eastes, and so efficiently was the vessel controlled, that no more blood was lost during the operation than was present in the ruptured sac. I next made an incision, five inches long, from above downwards, cutting freely into the swelling, and quickly plunged my left fore-finger to the upper opening in the artery; by a very little separation with the handle of the knife, and guided by my finger, I bared the artery above the sac, and put an aneurism needle armed with strong silk around it; Mr. Hilton then tied the vessel very tightly, squeezing my finger from it in the manipulation, thus effectually securing the upper end. But little dissection was

required to expose the lower end of the vessel, around which I as quickly applied a ligature. The coagula were now removed that had not escaped during the operation, and the deep inner surface of the artery was seen distinctly for about four inches, the superficial portion having been involved in the general enlargement. There was only one small vessel requiring a ligature. The tourniquet having been removed, the lower part of the wound was brought together by sutures, the upper part left open, the patient placed in bed, and the whole limb wrapped in cotton wool.

10 P.M.—There had not been any sickness; the only complaint the patient made was that of great hunger, which was soon relieved.

It will not be necessary to give the details of the daily treatment of this case; it consisted in scrupulous attention to cleanliness and the free use of Condy's solution to the wound; with a most liberal diet, a moderate amount of stimulants, iron and opiates.

The patient never had a bad symptom, or one that gave me the slightest anxiety; and on

Sept. 1 both ligatures came away upon using slight traction.

Sept. 14 the whole wound was closed.

One point in connection with this case was the failure of pressure: considering the great ease with which perfect command over the passage of blood through the femoral artery can be obtained by pressing that vessel against the pelvis, and therefore how gradually a clot can be formed by blood entering slowly from below, it seems remarkable no greater success should have rewarded my labour than I experienced. I attribute the non-success in this, as in some other cases, to the low diet to which the patient had been subjected for three weeks previous to any treatment; and yet, taking all circumstances into consideration, I should not have been justified in postponing any operative proceeding until his health was more fully restored. I have long been convinced that complete stoppage of the passage of the blood through the vessel is the most advisable method, and one that ensures the greatest success in the treatment of aneurism by pressure; it is used in a modified form in flexure of the limb, as recommended by Mr. Ernest Hart, and which plan I may say I tried in my patient for a few minutes, but it could not be borne. The last private case when I had a good opportunity of putting this complete pressure plan to the test was most satisfactory; it occurred on January 5, 1867. After four hours' complete

and perfect stoppage of the current of the blood by very able non-professional friends of the patient, acting under my direction, the aneurism, a popliteal, was entirely cured.

The treatment of diffused aneurism should, I think, vary according to the artery involved. Taking into consideration the age of my patient, and his previous good general health, I believe the operation of cutting into the sac, and tying both ends of the vessel offered the best chance of rapid recovery. Whether the artery involved—viz. the femoral—justified a departure from the plan recommended in a corresponding condition of the popliteal, is the point to which I particularly wish to draw the attention of the members of this Society. For my own part, I believe it makes exactly the difference in the treatment.

A femoral aneurism, when ruptured, is reached with ease, being comparatively superficial—the vein corresponding to the artery is beneath it or behind it in the greater part of its course and large nerves are away from the vessel. Whereas in the case of the popliteal aneurism, when ruptured, the artery is very deeply situated, and therefore part of the aneurism also—the vein corresponding to the artery is superficial to it and therefore may be implicated by the aneurism and a very large nerve is superficial to the artery, and may likewise with the vein be wounded in making the necessary incisions into the sac.

For these reasons I conclude that the practice of amputation, which has been adopted in the cases of ruptured popliteal aneurism, should not be used in the case of ruptured femoral aneurism. The case I have related, and the one mentioned by Mr. Birkett, before alluded to, tend to confirm my views in this matter, and induce me to recommend a return to the old operation in cases of ruptured femoral aneurism.

VIII.—*Cases of Intermittent or Paroxysmal Hæmaturia.* By Edward Headlam Greenhow, M.D. *Read February* 14, 1868.

Case I.

JAMES FARRER, aged 31, a greengrocer by trade, and a man of temperate habits, was admitted into the Middlesex Hospital, under my care, on Tuesday, September 17, 1867. He brought with him a small bottle of blood-coloured urine,

which he had passed on the previous Friday, and which became of a dirty hue and almost solid on being boiled.

History.—The patient's parents were both living and in good health, as were thirteen out of their fifteen children. The father had often suffered from gravel, and the patient himself on several occasions, about seven or eight years ago, had also passed gravel, which he had seen in the shape of small red particles at the bottom of his chamber utensil. At the age of ten years he had scarlet fever, unattended by any sequelæ, and he had syphilis four years ago, followed by sore throat, rupia, and pain in the shins. He was a resident in London and had never lived in a marshy district nor suffered from ague. Fifteen months ago he had for the first time an attack of rigors, accompanied by pain in the loins, and followed in a few hours by hæmaturia. After this he remained well for a year, or until about three months before his admission, when he was laid up with rheumatic pains in both knees, in the right ankle, and in the loins. A fortnight later, he had a distinct attack of shivering attended by pain in the loins, and followed very shortly by hæmaturia. He had had five similar attacks between that time and the date of his admission, including the one already mentioned on the previous Friday. All these attacks began in the same manner, ran the same course, and with one exception, in which case the attack lasted three days, they subsided entirely in a few hours or soon after the patient had gone to bed and become thoroughly warm. He said that the attacks were always excited by exposure to cold, and attributed the one from which he had suffered on the previous Friday to his having been chilled by remaining for several hours in an open shop. During the afternoon he had been seized with rigors and pain in the loins, and soon after 6 o'clock P.M. he had passed about half a pint of blood-coloured urine, of which he had brought a specimen to the hospital. The second micturition after the shivering-fit had yielded a less dark-coloured urine than the first, and the urine passed on the Saturday morning had been, he said, quite clear and of normal appearance. He went out about half-past 8 o'clock that morning, but a fresh attack of rigors, with pain in the loins, soon came on, which compelled him to return home, and about 11.30 A.M. he again passed blood-coloured urine. At the next micturition, about 2 P.M., the urine was paler in colour, and that passed at 6 P.M. was again quite normal in appearance.

State on Admission.—The patient was of sallow, unhealthy

aspect, slightly jaundiced, and somewhat emaciated. His features were sharp and pinched; skin cold; pulse 80, small and thready. His left knee was weak, painful, and swollen with synovial effusion. He was shivering and suffering from pain in the loins and limbs, which he attributed to having got chilled whilst coming to the hospital and waiting in the outer room his turn for admission, and expressed his belief, from his sensations, that he was about to pass bloody urine. He was accordingly sent to bed immediately, and two hours later I found that he had passed about six ounces of thick dark-coloured urine, not unlike porter but of a reddish hue. His pulse had risen to 110, his skin was hot, the temperature in the axilla being 103·2° F. The chest was normally resonant on percussion, and the breath and heart-sounds were perfectly healthy. There was deep-seated tenderness and pressure in both hypochondria, more particularly in the left, and there was also tenderness, though in a less marked degree, on firm pressure or smart percussion over both loins, especially the left. The liver-dullness was normal in extent. The urine passed immediately after the patient's admission was faintly acid, had a sp. gr. of 1021, and deposited on boiling a copious flocculent chocolate-coloured precipitate, partly soluble in nitric acid. On microscopical examination abundant crystals of oxalate of lime, some coloured granular matter, and amorphous lithates were seen, and a very few hyaline casts, some of which contained dark granules. No free blood-corpuscles were found. Of the four following micturitions, the urine of the first was of a port-wine colour, had a sp. gr. of 1021, and yielded an abundant deposit of albumen with heat and nitric acid. The second urine was of the colour of port-wine and water, acid, had a sp. gr. of 1009, and also gave an abundant precipitate of albumen with heat and nitric acid. The third was paler, sp. gr. 1004, became cloudy both with heat and nitric acid, but the deposit thrown down by either was entirely dissolved in an excess of acid. The fourth was pale-coloured, sp. gr. 1004, and yielded a bare trace of albumen with heat or nitric acid, the precipitate thrown down by the nitric acid being entirely soluble in a slight excess of acid.

Progress of Case.—On the day after his admission the patient had, at 9 A.M., a slight attack of chilliness, after which the temperature in the axilla was 100° and the pulse 86. He had also slight pain in the loins. The first urine

passed subsequent to the attack was of a reddish colour, had a sp. gr. of 1015, was scarcely acid, and gave a small deposit of albumen with heat and nitric acid. It was free both from casts and from blood-corpuscles. The urine passed four hours later was pale coloured, perfectly free from albumen, and had a sp. gr. of 1005.

On the 20th the patient had a return of rigors at 8.30 A.M. The temperature which had been 99° F. on the previous day was now 100° F. and the pulse had risen from 84 to 90. The urine passed at 9 A.M. was of the colour of port-wine, that passed at 11 o'clock was much less deeply coloured, and that at a third micturition later in the day was of a dark amber colour. Of these urines the first specimen was very notably albuminous, the second less so, and the third quite free from albumen. Some crystals of oxalate of lime and some amorphous lithates were found in all the specimens when they had been allowed to settle.

September 23, the patient had an attack of sore throat and catarrh. About 9 A.M. his feet became very cold, and he complained of pain in the loins, but had no rigors. The temperature rose from 98° to 100° F. and the pulse from 76 to 86. The urine passed previous to the attack had a sp. gr. of 1012, and was neutral and non-albuminous; that which was passed about an hour after the attack had a sp. gr. of 1020, was neutral, and contained a decided trace of albumen.

On the morning of the 24th, the patient had no rigors nor any of his usual signs of illness. The urine then passed had a sp. gr. of 1030, was acid and non-albuminous but loaded with amorphous lithates. About twelve o'clock he had pain in the loins, the temperature in the axilla rose to 100·4° F., and he passed some dark-red coloured urine, having a sp. gr. of 1020, and an alkaline reaction and containing albumen. Later in the day he passed urine of a pale amber colour, sp. gr. 1007, of neutral reaction and non-albuminous. The dark-coloured urine contained crystals of oxalate of lime and amorphous lithates, but no casts nor blood-corpuscles.

From this date there was no return of rigors or hæmaturia, and the urine continued free from albumen and from oxalates, but occasionally contained an excess of lithates, and several times showed a trace of indican on being treated with hydrochloric acid. The sp. gr. varied from 1012 to 1016, excepting when loaded with lithates, on which occasions it rose to 1025 and once to 1030. Some time after

his admission the patient had an attack of bronchitis, attended by rheumatic pains in the hips, knees, shoulders, and ankles. The left knee became more swollen and stiff, and was eventually blistered with great advantage. The blistering caused no renal irritation. On September 29, the temperature in the axilla had fallen to 98·40° F. and from that time varied from 96·5° to 98° F. He was discharged convalescent on October 31.

Treatment.—During the first week of residence in the hospital the patient took full doses of quinia with tincture of perchloride of iron and hydrochloric acid. September 24 he commenced taking half-drachm doses of syrup of iodide of iron with two grains of the iodide of potassium three times a day, and a pill containing two grains of sulphate of quinia night and morning, and continued this treatment until he was discharged.

State when last seen.—Patient continued under observation until November 29, during which period he had no return of rigors, hæmaturia, or albuminuria. He gained 20 lbs. in weight during the period he was under treatment.*

Case II.

Francis Bray, aged 8½ years, a pallid, delicate-looking boy, was admitted an out-patient at the Middlesex Hospital, under my care, on October 6, 1866.

History.—Both parents were living. His father had had rheumatic fever four years before and was still suffering from pains in the knuckles, which were much enlarged; one of his father's sisters, it was stated, suffered also from rheumatic gout. The patient had always been a delicate child; he was born in Camden Town, and had only twice been absent from London for a short time, once at Windsor and once at Sheffield. When he was about two years of age, his mother observed one day, for the first time, that his

* On January 24, 1868, when this paper had already been sent in to the Secretaries, James Farrer again presented himself at the Middlesex Hospital for admission, on account of a return of hæmaturia. Specimens of his urine were exhibited at the meeting of the Society which took place on the same evening, and Drs. Pavy and Dickinson were, at my request, nominated by the President as a Committee to co-operate with me in the investigation of the case. The joint report was read immediately after this paper at the next meeting of the Society, and follows it in the volume. The patient has continued under observation up to the present time (June 4), and has had no return of rigors or hæmaturia since January. He has improved much in appearance and in general health, and his urine, which has been frequently examined, has always been perfectly normal.

urine was of a red colour, as if mixed with blood; this appearance had been preceded by shivering and thirst. From that time, whenever the boy got chilled, she noticed that his urine became of a dark colour, looking sometimes as though it were mixed with blood, and at other times more like black beer with a froth upon it. On these latter occasions it always deposited a sediment after standing for a short time. The attacks of hæmaturia had invariably been preceded by chilliness or shiverings which came on suddenly, lasted two or three hours, and were followed by a febrile, hot stage, but not by sweating. They were also attended by thirst, by pain in the loins and abdomen, and frequently by pain in the left side. During the attacks, the boy generally had stiffness and weakness of the legs, so that he could scarcely walk, and his feet sometimes became of a purple colour and swelled so much that he could not put on his shoes; his ears also frequently became cold, purple, and painful to the touch. More rarely his hands swelled and became purple during the attacks. The first urine passed after the shiverings had always been dark-coloured, the second less so than the first, and at the third or fourth micturition the urine generally resumed its normal appearance. The boy had usually been pretty well by the day after an attack, and had continued so until some fresh exposure to cold or damp brought on a relapse. In cold weather, exposure even to a draught of air would suffice to excite rigors which were invariably followed by hæmaturia, and the attacks were in consequence much more frequent in winter than in summer. So far as could be ascertained, there had never been anasarca, the swelling of the feet and hands already described having always subsided entirely as the other symptoms disappeared.

State on Admission.—The urine was normal; pulse 79; tongue clean; bowels regular. Heart and lung-sounds perfectly normal.

Progress of Case. October 9.—The urine passed on the boy's rising in the morning was pale coloured, and showed only a slight trace of albumen. Whilst at school he had a shivering, after which he passed some dark red urine containing a considerable proportion of albumen, which was almost entirely redissolved on adding an excess of nitric acid.

13.—He had another attack, when the rigors were unusally severe, and there was much pain in the limbs, and intense thirst. The urine brought for examination was of a dark red colour and contained albumen, which was dissolved

almost entirely by an excess of nitric acid. Under the microscope, this urine showed crystals of oxalate of lime, blood-discs, epithelium, and a few casts. For about twelve days from this time the boy remained free from any return of illness, and during that period his urine was normal in colour and free from albumen.

25.—The urine passed in the morning was still normal, but at mid-day the boy had a shivering fit, which lasted nearly two hours, and was attended by pain in the loins, and by pain and great weakness in the knees and lower limbs. This attack was also accompanied by vomiting, which had, it seemed, been an occasional symptom in his case. Soon after the vomiting he passed some port-wine coloured urine which was feebly acid, had a sp. gr. of 1015, and deposited either on boiling or on being treated with nitric acid a copious sediment of albumen, which was entirely redissolved in an excess of acid. The red colour was partially, but not altogether, discharged by boiling, and it was subsequently entirely discharged by the addition of a small quantity of nitric acid, leaving the urine of a pale straw colour, with a deposit of albumen at the bottom readily soluble in an excess of acid. On microscopical examination of the urine, no blood-corpuscles were seen, but the field was thickly studded with crystals of oxalate of lime, intermixed with amorphous-looking rusty-coloured granules. The urine passed on the morning after this attack, during the boy's attendance at the hospital, was pale coloured, had a sp. gr. of 1008 and a slightly acid reaction, and was quite free from albumen.

Nov. 5.—He had an attack which was slighter than usual. The urine passed after the shivering was of a dark red colour, albuminous, and had a sp. gr. of 1020; the colour was entirely discharged by boiling.

16.—There was another slight return. The urine then contained only a very small quantity of albumen, which was entirely soluble in excess of nitric acid. On microscopical examination no oxalate of lime crystals could be discovered, but there were a few epithelial casts, and some small angular looking masses of a dark colour. From this time the boy had no further symptoms of his complaint until February 1867, when after getting wet he had an attack of rigors unattended either by pain in the loins or limbs, or by sickness, but for a couple of hours the boy was very weak and prostrate. The urine passed during the attack was free from albumen,

but deposited a large quantity of lithates. Not long after this date the patient discontinued his attendance.

Treatment.—In the first instance the boy was put under no definite treatment, in order that the progress of the case might be watched. At the end of a fortnight he was ordered to take three times a day a draught containing fifteen minims of tincture of perchloride of iron, five minims of diluted hydrochloric acid, and a grain of the sulphate of quinia, and he continued this treatment with unimportant modifications during his whole attendance at the hospital.

Case III.

Jane Sibley, aged 35, a married woman, pallid and sickly-looking, was admitted an out-patient at the Middlesex Hospital, under my care, May 4, 1866.

History.—Her father was very rheumatic and asthmatical, and she had herself frequently suffered from bronchitis. She stated that for two and a half years she had been subject to occasional attacks of hæmaturia, which had become more frequent during the last five months. These attacks had invariably begun with a sense of chilliness, usually passing into rigors, accompanied by pain in the loins, and followed in the course of an hour or two by the passing of blood-coloured urine. She had found by experience that the attacks only occurred after exposure to cold or damp, and that so long as she could avoid chills she remained well. She had never resided in a marshy district, and had never had ague. Often had pain in the side, and suffered from cold feet. Heart and lung-sounds normal. Patient stated that the urine passed the day before she presented herself at the hospital was of a deep purple colour, but she had not preserved it. The urine which she brought at her second attendance was of a pale amber colour, had a sp. gr. of 1022, and was free from albumen.

Progress of Case.—She continued her attendance somewhat irregularly during the three following months without having any return of hæmaturia. On August 16 she went on an excursion into the country, and returned home (a distance of fourteen miles) in an open cart. Whilst on the journey she felt chilly, and, on reaching her home, had rigors, followed in an hour by burning heat, but no sweating, and she soon afterwards passed urine of a deep port-wine colour, some of which she brought with her to the hospital

on the following day for examination. It had a sp. gr. of 1022, and contained a large proportion of albumen. The albumen, whether precipitated by heat or nitric acid, was of a deep chocolate colour, and carried down with it, on settling, the colouring matter, leaving the supernatant urine clear and of a pale straw colour. On microscopical examination, the urine contained some blood-casts and a few oxalate of lime crystals, and deposited, on standing, a large amount of coloured granular matter. For the space of two months the patient again remained free from any symptoms of her complaint; the urine was examined twice a week, and found to be free, both from albumen and from the colouring matter of blood; its sp. gr. averaged 1016. She still, however, had a sallow, sickly appearance, passed restless nights, had but little appetite, and remained feeble. The catamenia had been regular throughout her illness, and the bowels acted daily without aid. On the evening of October 17, after standing all day in a damp wash-house, she had an attack of rigors, attended by pain in the loins, and followed by heat and hæmaturia. A specimen of the first urine passed contained a large amount of albumen, which was partly dissolved in an excess of nitric acid. Under the microscope the urine was found to contain some oxalate of lime crystals, some free blood-corpuscles, and a very few blood-casts. The urine passed on the following morning was of the same character, but paler in colour. That passed on the morning of October 20 had a sp. gr. of 1015, was pale coloured, and quite free both from albumen and from blood-corpuscles and casts. The patient had no further attack until November 23, when she was again seized with rigors, attended by pain in the loins, and followed by heat and hæmaturia. The urine on this occasion had a sp. gr. of 1016 and deposited a copious precipitate of albumen, both with heat and nitric acid. From this time she had no return of the symptoms whilst under observation, and discontinued her attendance early in the year 1867.

Treatment.—The first prescription was a draught, containing two grains of sulphate of quinia, twenty minims of tincture of perchloride of iron, and ten minims of diluted hydrochloric acid, to be taken three times a day. Throughout the woman's attendance, the treatment consisted of chalybeate in some form, with or without quinia, according to the circumstances of the moment.

Case IV.

Martin Nichols, aged 34, a single man, and a blacksmith by trade, was first seen by me on November 7, 1866, at Mr. Nunn's request, whilst in the Middlesex Hospital, under his care for a hard tumor of the testicle, which he considered to be syphilitic. I obtained from the patient the following account of himself.

History.—His mother had died of cancer, but his father, one sister, and two brothers, were all living and in good health. He was a native of Cornwall, but had lived many years in London, and had never had ague. Said also that he had never had syphilis, though Mr. Nunn considered the disease in the testicle to be syphilitic. Previous to his present illness he had been accustomed to drink a gallon of beer daily, besides more or less spirits frequently. With the exception of a few days, about nine years since, during which he was laid up by a hurt in the left loin from a fall, he had always enjoyed good health, until he became subject to hæmaturia, of which he had the first attack about four years before his admission. He stated that it came on with a sense of coldness, first in the right foot, and soon afterwards in the left, followed by rigors, pain in the right hypochondrium, and great weakness in the loins. Soon after the rigors, he passed urine of a dark red colour, as if tinged with blood. At the second micturition after the shiverings, the urine was less deeply coloured, and by the third or fourth it had returned to the natural colour and appearance. He had suffered from similar attacks, more or less frequently, every succeeding winter up to the time of his admission, but he always lost them in April or May, and continued well until the middle of October or beginning of November in each year. The immediate exciting cause of the attacks had invariably been exposure to cold or wet. They were regularly attended by the symptoms already described, and very frequently also by sickness. He had, moreover, latterly suffered much from rheumatism in the neck, shoulders, and loins, and from sciatica. He had sought advice at various hospitals, and been a patient at University College Hospital, under the care of Dr. Harley, from December 1864 to May 1865. He did no work at all during the whole of that period, and had only three attacks of shivering attended by the passing of high-coloured urine. He was discharged in

May, and continued free from his complaint until the autumn. During the winter of 1865–6 he had at least seven or eight attacks, which he thought were more severe than any of the previous ones; but he became free from them, as usual, about April, and had had no return up to the date of my seeing him.

State when first seen.—The patient had a sallow, cachetic appearance, and the conjunctivæ were slightly jaundiced. He complained of uneasiness, sometimes amounting to pain, in the right hypochondrium. The pulse was 88, rather full, but compressible. The urine was transparent, rather high-coloured, non-albuminous, and had a specific gravity of 1025. On being boiled, it deposited a white cloud of phosphates, which was immediately dissolved by the addition of a single drop of nitric acid. After standing, it deposited a small quantity of flocculent matter, which, under the microscope, was seen to consist almost entirely of characteristic crystals of oxalate of lime, intermixed with a small quantity of amorphous lithates.

Progress of Case.—The patient left the hospital without having had any attack of hæmaturia, but was readmitted, under my care, on December 21, for an attack of jaundice. The liver was then considerably enlarged, and the urine was deeply coloured with bile and deposited a large amount of lithates, but only once during his stay in the hospital was found to contain a small quantity of albumen; the specific gravity varied from 1015 to 1030. Some small crystals of lithic acid were seen on one occasion under the microscope, and on another several hyaline casts. After a few weeks he was made an out-patient. On March 21, 1867, he complained of pain and weakness in the loins and lower limbs, and of rheumatic pains in the shoulders, arms, and hands. His gums were red and spongy His urine was clear and of normal colour, non-albuminous, acid, and of a specific gravity of 1025. Whilst walking home from the hospital on that day he became chilly and shivered, the coldness beginning, as usual, in the legs. Soon after his arrival at home he passed some blood-coloured urine, but on the following day his urine was again normal, and continued so during the week. On March 28, he brought with him to the hospital some urine he had passed at six o'clock that morning, which was quite clear, amber-coloured, and non-albuminous, sp. gr. 1025. In the out-patient room he complained of coldness in the legs and general chilliness, and said that he

was about to have an attack of hæmaturia. He was sent to lie down in an adjoining room, and was found to be sensibly cold to the touch; he had an anxious, depressed aspect, and a quick, somewhat irregular, and very feeble pulse. In the course of an hour he passed eight ounces of dark red urine, closely resembling port wine. It was very acid, had a specific gravity of 1026, and exhibited a large quantity of albumen, both with heat and nitric acid. The albumen thrown down by heat and nitric acid was of a chocolate colour, and was entirely dissolved on adding an excess of acid. On microscopical examination a very few blood-corpuscles were found, with numerous crystals of oxalate of lime, and a few epithelial casts. After standing for an hour or two, the urine deposited some amorphous, dark, granular matter and lithates. The urine passed at the second micturition after the chilliness differed only from the first in containing a much larger quantity of the coloured granular matter, more numerous casts, some of which were coloured, and a much smaller proportion of oxalate of lime crystals. That passed at the third micturition was still of the same general character and colour, but contained no blood-corpuscles nor crystals of oxalate of lime, and deposited a very large amount of amorphous lithates.

During all this time he continued cold, although the shivering had subsided. The urine passed at the fourth micturition was of a dark red colour, acid, sp. gr. 1015, threw down scarcely any deposit, and contained no blood-corpuscles nor oxalates, and scarcely any amorphous lithates. It was slightly albuminous and contained a few coloured granular casts. The urine passed on the following morning was amber-coloured, acid, had a specific gravity of 1016, deposited no sediment on standing, and showed only a trace of albumen with heat or nitric acid, which in the latter case was entirely, and in the former partly, dissolved by adding an excess of acid. Two days later, the urine continued of an amber-colour, had a specific gravity of 1020, and was entirely free from albumen. From that date the patient had no return of actual hæmaturia, though on several occasions he complained of coldness in the lower limbs and of pain in the loins and limbs, and the urine he passed at these times was of high specific gravity and contained a large quantity of amorphous lithates, and generally some crystals of oxalate of lime. On one occasion there was a trace of albumen, and on others a trace of sugar was found. Bile was also at times

found in the urine, but quite irrespective of the attacks of chilliness. The gums continued spongy and hæmorrhagic for a few weeks, and he had epistaxis twice or thrice to the extent of two or three ounces.

Treatment.—The remedies administered for the hæmaturia have been the sulphate of quinia and the tincture of perchloride of iron. For the jaundice, full doses of nitro-hydrochloric acid and purgatives were prescribed. For several weeks after the last attack of hæmaturia he took half-drachm doses of syrup of iodide of iron with three grains of the iodide of potassium three times a day.

State when last seen.—The patient is still under observation, is evidently in much better health, and has worked constantly at his occupation since he was discharged from being an in-patient. His urine has been examined almost weekly, and has continued up to the 10th of the present month quite free from albumen, but it very generally contains a few crystals of oxalate of lime.*

Besides the four cases recorded here, I had previously had three others of the same disease. One of these, a boy aged 13 years, was under my care during two successive winters, about ten years ago, as a patient of the Western General Dispensary. In all essential respects his symptoms resembled those of the cases I have described. The paroxysms only came on after exposure to cold or damp, and entirely subsided in a few hours. During their continuance the urine passed was blood-coloured and highly albuminous, but at other times it was normal, and the boy remained quite well during the summer intervening between my two winter attendances. Unfortunately the urine was not examined under the microscope.

Remarks.—Several English medical authors have related cases of intermittent, or, as it is perhaps more accurately termed by Dr. Pavy, paroxysmal hæmaturia. Amongst these are Sir Thomas Watson, Dr. Elliotson, and more recently Dr. George Harley, Dr. Dickinson, and Dr. Gull. M. Rayer also refers to the subject in his work on diseases of the kidneys, and quotes a case published by M. Gergères

* Martin Nichols has continued under observation until the present time (June 1868). He has had no attack of rigors or hæmaturia since March 1867, has been able to work continuously from that date, and says that he feels better than he has done for some years. His urine is generally of a bright amber colour, but at times turbid from deposit of lithates, and on microscopical examination has always been found to contain a few small crystals of oxalate of lime.

of Bordeaux, which appears to have been exactly of the same nature as those I have brought under the notice of the Society. Several of these authors have considered the disease to be of malarious origin, and there is no doubt that in some of the cases published the patients had also had ague. But, on the other hand, not one of all my patients had suffered from ague, and some of them at least had never even visited a malarious district. The same absence of malarious influence has been noted by Dr. Murchison and Dr. Pavy, in cases published by them in the Pathological Transactions. The disease, in fact, merely resembles ague in its paroxysmal form, and in its commencement with rigors, which are followed, however, by only an imperfect hot stage and more rarely by sweating. It differs from ague in not being periodical and in requiring, apparently, a fresh exposure to cold or damp to excite each separate paroxysm. The uniform character and course of the symptoms in the several cases clearly point to an identical cause, which I have no hesitation in regarding as some form of dyscrasia. In several respects the paroxysms bear a strong analogy to certain ephemeral febrile attacks, to which some persons with gouty tendencies are liable, and which also begin with rigors followed by fever and usually by more or less sweating, and are often attended by sickness and by a copious deposit of amorphous lithates in the urine. One fact which I cannot but regard as very significant, though I am unable to give it any definite interpretation, is the constant presence of oxalate of lime crystals in the urine passed during the paroxysms, and their absence as a rule at other times. The sallow, unhealthy aspect of patients suffering from this disease is indeed not unlike that attributed by Dr. Prout to the oxalic acid diathesis, of which he further mentions a tendency to hæmorrhage from the kidneys as one of the concomitants. Two of my patients were also subjects of secondary syphilis, a taint which, according to the same authority, seems occasionally to give a predisposition to the oxalic acid diathesis. Another fact which I consider especially worthy of notice is that all my four patients suffered from so-called rheumatic pains during the paroxysms and the first and fourth at other times also. In these latter cases it is possible that the syphilis may have had something to do with the occurrence of the rheumatic pains at ordinary times, but Dr. Prout notes the frequent co-existence of chronic rheumatism with the oxalic

acid diathesis, and Dr. Salusbury, an American physician, has lately described a form of rheumatism which he considers to arise from the presence of oxalate of lime in the blood. No opportunity has occurred to me of investigating the morbid anatomy of this disease, but it seems to me pretty clear that it is unattended by any permanent lesion of the kidneys, although the presence, during the paroxysms, of casts and occasionally of blood-corpuscles in the urine leaves no doubt of there being, at such times, congestion of these organs. Behind this local condition there is, however, beyond question some constitutional state, and I am inclined to believe that the true pathology of this disease is to be sought in some condition of the blood itself and not of the kidneys.

Report on Dr. Greenhow's *case of Intermittent or Paroxysmal Hæmaturia. Read February* 14, 1868.

The patient, James Farrer, whose case was remitted to us for investigation at the last meeting of the Society, was discharged from the Middlesex Hospital, as stated in Dr. Greenhow's paper, on October 29, 1867, and continued free from any symptoms of hæmaturia up to January 21 of the present year. He had again been in the hospital from December 27 until the last-named day for an attack of sore throat, apparently consequent on taking cold, which at first assumed a diphtheritic appearance, the left side of the uvula and soft palate becoming speedily coated with a pulpy exudation, surrounded by a zone of dusky inflammation. It was attended by swelling of the glands at the angle of the jaw, and by extreme depression. In the course of a few days the uvula and a portion of the free margin of the velum sloughed away, and as the more acute symptoms subsided, several ulcers, apparently of a syphilitic nature, formed on the posterior wall of the pharynx. The urine had continued throughout this illness perfectly free from albumen, and from the colouring matter of blood; but during the first few days it had become turbid on cooling from the deposit of lithates. The patient's throat being much better, and requiring only constitutional treatment, he was discharged from the hospital quite convalescent on Tuesday January 21; but after appearing before the Board of Governors on that day, he continued to loiter about the hospital corridors, until his feet became cold. On his way home he shivered, and soon afterwards

passed urine of a dark port wine colour. . The next urine, however, he stated, was pale and transparent. On the forenoon of Thursday the 23rd, after sitting in a cold draught from an open window, he had a fit of chilliness which lasted more than an hour, but did not amount to shivering, and was not followed by any distinct stage of heat or sweating. It was accompanied by severe pain in the loins. An hour later he passed some urine resembling reddish-coloured porter, of which he brought a specimen with him to the hospital on the following day, Friday January 24. This specimen was reserved for examination and marked No. 1. He stated that, as usual in these attacks, the urine had become paler at each succeeding micturition after the chilliness, and that the fourth urine passed had resumed the normal appearance. On his way to the hospital that morning he had felt chilly, and had had much pain in the loins and calves, and at 11 A.M. whilst in the out-patient room, he passed the urine marked No. 2. He was immediately admitted into Hertford Ward and sent to bed. Though cold and chilly, he had no actual shivering; his face was yellowish as if slightly jaundiced, but the conjunctivæ were white; his features were sharp and pinched. His pulse was 76, feeble, his feet cold, and he still had pain in the loins. At 1.45 P.M. he passed the urine marked No. 3. The urines of the four following micturitions on the same day were preserved and marked respectively Nos. 4, 5, 6, and 7, and all these specimens were exhibited at the meeting of the Society on the same evening.

On the next day, Saturday, January 25, we all saw James Farrer together, and the above details were supplied chiefly from Dr. Greenhow's notes. The patient had had no return of chilliness since his admission. His aspect was sallow, as described, his pulse quiet, skin cool, and save the ulcers of the posterior wall of the pharynx he was free from complaint. He had passed urine seven times between 9 o'clock on the previous evening and 2 P.M. on the day of our visit, and all the specimens had been preserved separately and marked respectively from Nos. 8 to 14. We examined them all chemically, and those which appeared to us of most importance microscopically also. On Sunday, January 26, at 6 o'clock A.M., the patient's feet felt cold, and he became chilly, in consequence, he thought, of his having been partially uncovered. He had also some pain in the loins, but the attack was very slight and of short duration, and there was no febrile disturbance after the chilliness. At 8 A.M. he

passed some urine which was normal in colour, and when passed perfectly transparent, but very soon became turbid. At 9 A.M., when seen by Dr. Greenhow, his pulse was 72, very feeble, his body comfortably warm, and he was free from pain or uneasiness. He had taken some hot tea, which he said never failed to relieve the chilliness, and after taking which he always found his urine become paler and more natural. A specimen of the urine passed at 8 A.M. was marked No. 15 and examined by us chemically and microscopically.

Report on the several specimens of urine.

No. 1, passed on January 23, at 1 P.M., was of a reddish-brown colour, very acid, sp. gr. 1021. Deposited, after standing, a reddish-brown sediment, much resembling amorphous lithates. The supernatant fluid was clear and ruddy, looking much like bright port wine, and gave, when tested, a large albuminous precipitate of a dark orange colour; the fluid remaining after the deposit of the albumen had the natural colour of urine. Under the microscope the sediment deposited on standing was of a rusty colour, and consisted of fine yellowish-red amorphous granules, some bodies resembling irregularly formed blood-corpuscles, and a few bodies of a yellowish-red colour, some round and others irregular in shape, but all considerably larger than blood-corpuscles. Intermingled with this deposit were numerous crystals of oxalate of lime and many very slender hyaline casts containing a few irregular yellowish granules.

No. 2, passed on January 24, at 11 A.M., was of the colour of weak port wine and water, acid, sp. gr. 1007, slightly albuminous. Under the microscope small crystals of oxalate of lime were found, together with amorphous granular matter closely resembling that described in the sediment of No. 1. A few hyaline casts were also seen, containing amorphous granular matter, and in one case two epithelial cells.

No. 3, passed on January 24, at 1.15 P.M., after the chilly fit, was almost black in colour, acid, sp. gr. 1024. It was highly albuminous, the precipitate being of a pale chocolate colour. On standing it deposited a sediment similar in appearance to that given by No. 1, the supernatant fluid being of a dark port wine colour. Under the microscope the sediment was seen to consist of dark-brown amorphous granular matter intermixed with numerous crystals of oxalate of

lime and slender hyaline casts, containing brownish granular matter, together with a few broader casts.

No. 4, passed same day, at 3 P.M., was of the colour of weak port wine and water, faintly alkaline, sp. gr. 1022. Exhibited with heat and nitric acid a mere trace of albumen. Under the microscope a few crystals of oxalate of lime were found, some amorphous deposit, and a few granular casts, one of which contained two epithelial cells.

No. 5, passed same day, at 4.15 P.M., was of a dark amber colour, clear and normal in appearance, slightly alkaline, sp. gr. 1020, free from albumen. After standing it was found on microscopical examination to contain only a few crystals of oxalate of lime. A single cast only was seen by one of our number.

Nos. 6 to 14, passed between the hours of 5 P.M. of January 24 and 2 P.M. of January 25, were all of natural appearance and non-albuminous. They varied in specific gravity from 1005 to 1020. On boiling No. 8, passed at 9 P.M. on January 24, a cloud of phosphates was thrown down, and on microscopical examination of this specimen a few oxalate of lime crystals were found, from which the others were quite free.

No. 15, passed on January 26, at 8 A.M., was of a pale amber colour, acid, sp. gr. 1028, and when passed was quite transparent. It was non-albuminous, but after standing it deposited a copious sediment of lithates intermixed with a few crystals of oxalate of lime. No casts were observed.

We again saw the patient together on Monday, February 3, when we found that he had had no return of shivering or hæmaturia, and that his urine was perfectly normal. He was suffering from no apparent complaint but the ulceration on the pharynx.

W. H. Dickinson.
E. Headlam Greenhow.
F. W. Pavy.

IX.—*Abscess in or about the Kidney, opening externally.* By Reginald Southey, M.D. *Read February* 14, 1868.

RICHARD HISLOP, age 32, admitted under my care at St. Bartholomew's Hospital May 28, 1867. A dock labourer, living in St. Luke's parish. Married, and has two children; temperate, has enjoyed fairly good health, with the exception of occasional inconvenience from a urethral stricture of eleven years' standing.

Contracted gonorrhœa fifteen years ago; symptoms of stricture were first complained of four years afterwards, when he attended at St. Bartholomew's Hospital for some little time once a week, for the purpose of having a catheter passed. Two years ago he again experienced difficulty in passing his urine, and attended a second time, becoming much better after the passage of catheters a few times; a year ago he placed himself in the hands of a surgeon, who passed an instrument for him every Sunday morning up to three weeks ago. The last time the instrument was introduced it gave him great pain, and he determined to submit to the operation no longer. Either the cathetrism, or possibly some imperfect emptying of the bladder, for which perhaps this remedial measure had been adopted, had induced a catarrh of the bladder seven weeks before his admission into the hospital, since to that date he refers the commencement of his present illness, saying that he then first noticed that his urine was thick at the moment he passed it, that he had constant calls to pass it, indeed could scarcely hold it for twenty minutes together, and that he had an aching pain, which ran up the left side and down the left thigh. The pain and frequent micturition incapacitated him from work and prevented his sleeping at night, circumstances which brought him to the hospital.

Present condition, May 28, 1867.—A dark complexioned man, fairly nourished, with an anxious expression, and having a haggard look; skin hot but perspiring; pulse 100, regular, rather jerking; tongue peculiarly red at the tip and down the centre, with white fur at the sides, papillæ elevated; appetite moderately good; thirst great; bowels confined for three days; micturition very frequent; urine scanty; sp. gr. 1026, contains a large quantity of pus, with about as much albumen as would correspond to this. He complains of pain in the left flank and groin. In the left iliac region, and extending

into the left lateral, between the upper edge of the ilium and the false ribs on the left side, there was a deep-seated, smooth outlined tumor, hard to the feel, and painful upon pressure. Pain of a sharp, shooting, intermittent character frequently extends downwards through the groin into the front and outer side of the left thigh, but not at all upon its inner surface.

The urine is passed in a thin stream, in small quantities at a time, very frequently, and scalds him somewhat in its passage. He states that he often feels a sharp pain in the perinæum just after micturition—pain enough to make him tremble and shiver all over; but he has had no distinct rigor that he recollects. There was some tenderness but no fullness in the perinæum, with aching in the same part after action of the bowels. Ordered milk dietary.

Treatment.—Linseed poultice, an opium suppository at night; liq. pot. ♏ xv., tinct. hyoscyam., ʒss., mist. camph. ℥j., 6tis horis.

29.—Very little sleep last night. Pain remains severe. Micturition not so frequent. Urine contains a large amount of pus, but is faintly acid when passed, and not at all ropy; rather milky. (No present bladder catarrh.) Medicine repeated with liq. opii sedativ. ♏ v. 6tis horis. Four leeches to the most painful part in the flank.

30.—Ol. ricini ℥ss. Slight change in the medicine: liq. pot. ♏ x., liq. opii ♏ v., sp. æt. nitric. ♏ xx., infus. calumb. ℥j. 6tis horis.

31.—Less pain; slept tolerably; one loose action; urine more abundant, still containing a good deal of pus and albumen; pulse 96; tongue furred posteriorly, clean in front. Ordered two eggs daily.

June 1.—Feels better; pain much the same, but not enough to prevent sleep; slight sore throat, tongue cleaner; no action of bowels; urine clearer, containing less pus; pulse 90, feeble; swelling not at all decreased; was able to omit the opium; his general condition was improved.

Minuter details of his case are needless; its course may be briefly summarised. Symptoms of hectic fever became more pronounced in about a week.

June 7 and 8—The size of the swelling fluctuated within small limits: one day it seemed larger and felt harder than on another. When the urine was scanty and clear it seemed larger and gave him more pain, and when more copious and pus-mixed he felt and looked better. Appetite, too, varied much, but was never very bad; his temperature at

night time rose occasionally to 101·5° F, but never higher as observed.

On June 25, a semi-solid (puddingy) motion was passed on the top of which pus was distinctly visible, being unmixed with the fæces and apparently expressed by a last straining effort. The urine at the same time contained pus, and although that passed at some interval from an action of the bowels, was not infrequently quite clear, that which followed shortly upon a motion was invariably turbid from pus.

On June 28, his pulse had risen to 110, was full, and his condition very serious.

On July 1, I noticed that the tumor began to be more prominent towards the back, just beneath the false ribs.

On July 3, I believed I could feel indistinct fluctuation in this part.

On the 6th inst. I asked the advice of my colleague, Mr. Holden, upon his case, in consultation with whom it was decided, as the abscess was still very deep-seated, to make an exploratory puncture with a small trochar; pus at once followed, and the opening was enlarged to about 1¼ inch; about 5 oz. of healthy inoffensive pus came away; lint was left in the opening, and a poultice applied.

The further progress towards recovery was exceedingly slow; his appetite was variable, seldom good, quinine was ill borne by him, and his principal articles of diet were milk, wine, and porter. The porter he craved for, and it was not until diarrhœa set in, on July 30, that I felt justified in taking off what was apparently the only nutricious article that he enjoyed. The discharge of pus amounted to about 3 oz. in twenty-four hours.

The diarrhœa quickly assumed the aspect of dysentery; shreds of mucus and blood appeared in the stools on Aug. 4, so that I believed myself justified in conjecturing that the abscess or sloughing process had implicated the rectum or descending colon. I directed that the rectum should be washed out with a milk and water injection night and morning, and that an hour after this nightly injection, an opium suppository should be introduced into the bowel, but later I found reason for preferring a second small enema of ℥ij. of starch with ♏ xv. of laudanum. This treatment I continued until all tenesmus had ceased, and until all traces of pus had disappeared from the motions.

On Aug. 16 the motions became solid and quite free from

pus, and from that date he had no further occasion to use enemata.

Sept. 10.—His appetite had improved, and he was able to take a full meat diet, the discharge from the wound still continuing, but no pus making its way through other channels. The abscess was manifestly contracting, the discharge not amounting to much more than ʒij. in twenty-four hours; but this contraction was attended by a dragging up of the bladder towards the left kidney, which produced a train of symptoms sufficiently characteristic of their cause, but such as entailed no little distress to the patient and disheartened him a great deal.

The capacity of his bladder was apparently greatly diminished, and the effort of its contraction upon its contents attended by much pain and spasm. Thus he had to micturate very frequently, passed only a small teacupful at a time, and took a long and painful time in passing it. The urine, however, was itself quite clear, free from pus and free from albumen, so that I could not but auger well in my prognosis of his case.

Opium again came in greatly to his aid at night, and for a few days a catheter passed night and morning, to ensure complete emptying of the bladder, further benefited by convincing him that his troubles were not due to constriction in the urethral passage. No further complication delayed his convalescence, but the external wound only ceased to discharge about ten days before he left the hospital, which was on November 28.

The case I have detailed requires few remarks. Whether the abscess arose in the substance of the kidney or in its neighbourhood remains uncertain, but the weight of evidence inclines me to the belief that the suppurative process occurred principally if not primarily in the kidney itself.

There was no history of blow or injury to account for perinephritic inflammation, no caries of vertebræ or diseased bone to explain a burrowing psoas abscess.

The swelling came on acutely; it followed a bladder catarrh, that had been itself induced by irritation of the urethral passage by catheters.

The history corresponds neither with the symptoms now generally noted of abscess induced by calculus impacted in the ureter, nor with those observed in renal hydatids. There was no cardiac murmur, no past rheumatic history to render renal embolism possible; no constitutional disturbance, no

physiognomical aspect, no contemporaneous lung symptoms to render the hypothesis of scrofulous pyelitis or of pyæmia tenable. The affection was entirely local in the first instance.

Could it have been suppuration in a renal cyst excited by the catarrhal inflammation that had extended from below upwards into the kidney? It is needless to speculate. The facts were these: stricture, prostatitis, cystitis, a tumor in the region of the left kidney, pus mixed with the urine, when the cystitis had passed over, pus passing by the rectum, dysenteric affection incited by its lodgment in the rectum, opening of the abscess in the loin, slow evacuation of its contents.

Recovery from abscess in the kidney is so rare an event that I have deemed this instance worth bringing to the Society's notice.

X. — *Excision of the Knee-joint eight years after the Operation.* By Thomas Smith. *Read February* 28, 1868.

MR. THOMAS SMITH showed a patient seventeen years of age, whose knee-joint he had resected eight years ago. At the time of the operation, the patient was nine years of age, and had suffered from disease of the knee-joint for three years; about an inch of the end of the femur was removed, a thin slice was taken off the tibia, the patella was taken away, and the hamstrings were divided. The epiphysial cartilage of the femur was injured to a small extent.

A photograph taken five months after the operation, showed a well formed and almost straight limb, which was thoroughly strong and useful—a firm bony union existing at the knee. The boy was more active, and a better runner than most of his age, though the limb was shortened to the extent of 2 inches.

He remained strong and active, his limb being straight and thoroughly efficient until three years ago, when he began to learn carpentering; very soon after this, from standing a great deal on the left leg, the resected knee began to give way—the limb being as if affected with genu valgum. After giving up carpentering, he worked on a farm for a year; this injured his leg still more. He has now given up his work two months, and since then the distortion has remained in 'statu quo.' He can walk four or five miles, can run and can jump, though the limb is considerably bowed

inwards at the knee. The left limb is 5 inches shorter than the right, the loss in length being somewhat due to the bending of the limb; when measured over the knee the shortening is reduced to $3\frac{1}{2}$ inches.

The case was brought forward to show the effect of the operation of resection in growing bones. During the eight years that had elapsed since the operation, the sound limb had outgrown the resected one by $1\frac{1}{2}$ inch. Thus the diminution in the power of growth had been small—indeed smaller than might have been expected, considering that the epiphysial cartilage was injured to some extent at the time of the operation.

The result of the case supported a statement made by Mr. Smith in 1857,* that, provided the epiphysial cartilages were uninjured by the operation, the growth of the limb would in all probability be unchecked.

XI.—*Case of chronic rheumatic Arthritis of the left Hip, in a young Man nineteen years of age, and now under Treatment.* By CARSTEN HOLTHOUSE. *Read March* 13, 1868.

BENJAMIN HUNTER, aged 19 (baker), a tall, fresh-coloured, healthy, juvenile-looking young man, was admitted into the Westminster Hospital, under my care, on November 14, 1867. He was unable to walk, and was carried upstairs and placed in bed. On examining him a few hours afterwards, he was found lying on his back, with the lower limbs extended, and the left one shortened and rotated strongly outwards, so that it rested entirely on its outer side, and could not be moved from this position either actively or passively, the hip-joint being as fixed as in old-standing disease of that articulation. The left trochanter was rather more prominent than the right, and nearer to the iliac crest. A tape stretched from the anterior superior spine of the ilium to the top of the trochanter measured $4\frac{1}{4}''$, while the distance between the corresponding points on the right side was $5\frac{3}{4}''$; by prolonging the tape from the above points along the outer side of the thigh, it formed an angle of 100° on the left side, and 120° on the right. From the anterior superior spine of the left ilium to the inner malleolus the distance was exactly $37\frac{1}{2}''$; from the corresponding points on the right side it was

* Brit. and For. Med. Chir. Rev. 1857. No. 20, p. 285.

39″, showing therefore a shortening of 1½″, wholly due to changes in the head and neck of the thigh bone and possibly in the acetabulum, and not to any obliquity of the pelvis. The pelvis, however, was oblique, but in an unusual direction: it had an axial twist so as to be higher vertically (as he lay supine) on the left side than the right; or, in other words, it projected anteriorly, so that a piece of wood placed transversely on the lower part of the abdomen, with one end resting on the left anterior iliac spine did not touch the right, which was posterior to it by two-thirds to three-fourths of an inch. This is the reverse of what is observed in ordinary cases of hip-joint disease. This alteration in the position of the pelvis was even more marked when the patient lay on his face than on his back, and so, too, was the projection of the left trochanter. The other kind of pelvic obliquity which is said by Dr. Adams and other writers to accompany chronic rheumatic arthritis—viz. the elevation of the pelvis on the diseased side, so that the crest of the ilium approximates to the last rib—was in this case not apparent.

As regards the subjective symptoms, there was pain on hard pressure in front and on the outer side of the joint, especially about the anterior margin of the tensor fasciæ muscle, where a few small hard glandular-like bodies were detectable, also on jerking the limb upwards from the foot; but pressure behind the trochanter was not painful. For the last six nights he had been troubled with starting pains in the joint. No swelling or fluctuation could be detected in the cavity. The whole limb, though not perceptibly wasted, was less firm than the other.

History of the Disease.—About five months before his admission, he began, without any obvious cause, to experience a stiffness in the joint when he sat down or rose up; but on walking about it went off. This symptom slowly increased and became persistent, and after several weeks was followed by a dull aching pain in the part, which became worse after exertion, and especially by the pressure of the heavy bread tray against the groin, as he carried it from the bakehouse to the shop. He now became perceptibly lame, but whether the lameness was the result of stiffness and pain in the joint, or of the shortening of the limb, or of a combination of these causes, he was unable to say, and indeed he was quite unaware of the limb being shortened.

On November 8—i.e. six days before his admission to the hospital—whilst trying to reach something with a long pole,

it got between his legs and threw him down, but he fell on his sound side and rose without assistance, walked upstairs, and went to bed. From this time the joint became more painful, so that he was unable to bear the least weight on it, whilst starting pains at night awoke him from his sleep, and this aggravation of his former symptoms continued when he came under my care on the 14th.

Family History.—His father died when he was quite young, but of what cause he is ignorant. His mother married again, and has three children by her second husband, all of whom are healthy. My patient is the only child by her first husband. The grandfather and grandmother on the mother's side were both rheumatic; the former is dead, but the latter is still living, and lame from rheumatism. Of his father's family he has no knowledge.

Treatment before Admission.—This consisted in the exhibition of medicine, of the nature of which he was ignorant, and of frictions to the joint, with a stimulating liniment, from neither of which he derived any appreciable benefit.

Treatment and Progress of the Case after Admission.—The patient at first was simply confined to bed without any apparatus being applied to fix the joint. A linseed meal poultice was kept constantly on the groin. Ten grs. of the compound ipec. powder were taken every night, and 5 grs. of the iodide of pot. in 1 oz. of the decoct. cinchonæ, three times a day.

Nov. 30 the following note was made: 'The pain in the joint and the tenderness on pressure are much less, and passive movements of the limb can be made in the sense of abduction, adduction, and slight flexion; but all attempts to rotate the thigh inwards cause pain in the knee.'

As the limb was too fixed in its abnormal position to admit of the application of an extending splint, a weight of ten pounds was ordered to be attached to the foot, and suspended over a pulley at the foot of the bed. Poultice and powder to be discontinued. The next note recorded is to the following effect:—

'Dec. 26.—All tenderness about the joint has disappeared, and he has no painful startings of the limb at night; but the hardnesses remain, some of them feeling like small glands. Says he can bear more weight on the limb; but on getting him out of bed and telling him to bear on the limb, pain was immediately felt in the knee. Rotation of the thigh inwards is still impossible.'

Having to leave town for a few days on December 31, my patient was left in charge of a colleague, who increased the dose of iodide of potassium from 5 to 8 grs., and removed the weight from the limb. On my return, on January 8, I found him worse, there was again tenderness on pressure in the situations where it formerly existed, and the painful startings at night had returned; the weight was therefore reapplied, and the following lotion directed to be applied to the groin on a piece of lint covered with gutta percha: Hydrarg. perchloridi, ammonii chloridi, ā gr. v., aquæ ℥j., ft. lot.

Jan. 15.—'The pains and startings of the limb at night have disappeared. The lotion has brought out an abundant rash, and has caused some tenderness and enlargement of the inguinal glands.' It was ordered to be discontinued.

'29.—The inflammation of the skin and inguinal glands caused by the lotion has entirely subsided. There has been no recurrence of the painful startings at night, and pressure around the joint gives no pain; he can even bear his weight on the limb without pain, but walking brings it on. Flexion of the thigh on the pelvis to a very limited extent can be made both actively and passively, and also abduction and adduction in about the same degree; but all inward rotation of the limb is impossible, and the attempt, if persisted in, is painful. The pelvis remains as at first, more prominent anteriorly on the diseased than on the sound side.'

The weight was ordered to be removed from the limb during the day and only applied at night, and passive and active movements of the joint to be practised.

Feb. 5.—He has been up and about on crutches since the date of last note, and can bear half his weight on the limb without pain; and while standing still has no pain, but the act of throwing forward the limb in progression is painful.

March 7.—He continues without material change, but is soon fatigued if he goes about much, and has some aching of the joint afterwards. The limb is half an inch shorter than on his admission, and the crest of the left ilium is nearer to the last rib.

Remarks.—The remarks I desire to make on this case have reference to the following points:—

1. *The age of the Patient.*—It was stated by Dr. Robert Adams, in his earlier descriptions of this disease, that when confined to the hip-joint, it rarely attacked individuals under fifty years of age; hence he gave the name of 'Morbus coxæ

senilis' to the disease in question. Subsequently, having met with instances of it occurring as early as the age of thirty or forty, he substituted for this name that of 'chronic rheumatic arthritis.' The propriety of this change is well illustrated by the case narrated, which is not only an exceedingly good example of the disease, but of the early age at which it may commence.

2. *The local character of the Disease.*—It is worthy of note that notwithstanding the family history of the patient and the spontaneous origin of his disease, both point to a rheumatic and hereditary, and therefore constitutional, taint; yet, in its limitation to one joint, it belongs to the purely local form of the affection of Dr. Adams.

3. *The rapid shortening of the Limb.*—The morbid action which could bring about a shortening of an inch and a half in less than five months (for the disease had existed many weeks before there was any lameness) is very remarkable, especially when we take into consideration the essentially chronic nature of the malady and the subacute character of the symptoms.

4. *The Symptoms.*—As regards these, they correspond pretty nearly with those set down to this disease by most writers, save that no crepitation or crackling can be elicited by such movements as the joint admits of. The rationale of the shortening and position of the limb and pelvis deserves a few remarks. The real shortening is doubtless owing to the absorption of the neck of the femur, the depression of its head, and perhaps the deepening or elevation upwards of the acetabulum; but it has been observed by Dr. Adams that the shortening of the limb is apparently greater than it really is, and this he rightly attributes to the elevation of the pelvis on the affected side, and a lateral lumbar curve; but he does not seem to be aware that both the elevation and the curve are merely secondary results of an adducted and fixed femur, just as that anterior pelvic depression and lumbar incurvation termed lordosis, are secondary results of the thigh being fixed in a position of flexion.

I may perhaps be allowed to illustrate this subject further by what we observe in ordinary cases of hip-joint disease. In one case we find the pelvis lower on the diseased side and the spine correspondingly curved, because the thigh, being fixed in the position of abduction, cannot be brought parallel with the other, except through this pelvic and spinal distortion. In a second, it is higher on the diseased side, because

the thigh, being fixed in a state of adduction, equally necessi tates for its parallelism a distortion the reverse of the former. In a third, it is depressed anteriorly, because the flexed and fixed femur would otherwise be a bar to erect locomotion. The phenomena which result, then, from fixation of the thigh in any of the above positions are—Apparent lengthening of the limb and lateral spinal curvature in the first case; apparent shortening of the limb and lateral spinal curvature in the second; apparent shortening and anterior spinal curvature or cordosis in the third. I am disposed to believe that these different positions of the thigh in hip-joint disease, are, in certain cases, regulated in the first instance by the patient's feelings, the limb being maintained in that posture in which it is most easy, and this again being dependent on the part of the joint surface in which disease is most active. Subsequently, the ligaments and muscles adapt themselves to the abnormal position of the limb, and more or less fixation results. On the supposition that volition has nothing to do with these postures, the greater prevalence of flexion and adduction may be accounted for on the hypothesis that the nerves which supply both flexors and extensors of the thigh being equally irritated by the joint disease, the more numerous and powerful muscles—viz., the flexors and adductors—overcome their less powerful antagonists (the extensors and abductors). The abduction with apparent lengthening is explicable on purely physical principles, and marks the nature of the disease and the condition of the joint rather than the stage, as usually taught. The condition is one of distention of the joint cavity, either with increased and modified synovial fluid, as in ordinary synovitis; or with pus, as in suppurative inflammation of the joint.

Report upon Mr. Holthouse's *Case of Chronic Rheumatic Arthritis. Read March* 27, 1868.

The Committee met Mr. Holthouse at the Westminster Hospital, on Monday, March 16, 1868, and made a careful examination of the patient brought before the Clinical Society on March 13. They confirm in every particular the description of the present condition of the patient, given by Mr. Holthouse, the left thigh being shortened, everted, and fixed, and there being some thickening about the front of the hip-joint, but none at the back, the hollow behind the trochanter being natural. With regard to the interpretation

of the case the Committee is divided, Mr. Heath agreeing in the view taken by Mr. Holthouse that it is a case of chronic rheumatic arthritis at an unusually early age, the shortening depending partly upon absorption of the neck of the thigh-bone, and partly in changes in the articulation, and there being some osteoid deposit in the front of the capsule. Mr. Bryant and Mr. Maunder regard the changes which have taken place as due to inflammation of the head and neck of the thigh-bone not necessarily rheumatic.

THOMAS BRYANT.
CHRIS. HEATH.
C. F. MAUNDER.

XII.—*Case of Ectopia Vesicæ.* By THOMAS SMITH. *Read March* 13, 1868.

A FEMALE child, aged four years and a half, was shown by Mr. Thomas Smith, suffering from this deformity.

The abdominal walls were deficient from the umbilicus downwards, the pubes was widely cleft, the anterior wall of the bladder was absent. The vagina was very small, the labia were large and prominent, the nymphæ were small and imperfectly formed.

The vagina admitted a probe an inch and a half, apparently; a small body could be felt from the rectum in the situation of the uterus. If this was the uterus, that organ was much smaller than natural.

The most interesting feature of the case was, as Mr. Smith indicated, that the prolapsed surface of the bladder presented a cutaneous integument as low down as the orifices of the ureters, thus largely diminishing the inconvenience of the deformity, since one serious annoyance usually consists in the pain caused by the friction of the clothes on the exposed mucous membrane of the bladder.

M[illegible] Smith showed a drawing of another female child, in w[illegible] same deformity existed, and in whom the mucous [illegible] he bladder was covered down as low as the orifices [illegible]ers with a cutaneous integument. This condition [illegible]h said he had never observed in males.

XIII.—*Case of Cancer of the Œsophagus, with external openings, and involving the Larynx.* By CHRISTOPHER HEATH. *Read March* 13, 1868.

ON April 2, 1867, I saw Mrs. D., a very emaciated old lady of 60, suffering from great difficulty of swallowing, and only able to take a small quantity of finely-chopped food. In front of and behind the lower part of the left sterno-mastoid were two sinuses, and the skin for a considerable distance around them was exceedingly red and sore. The daughter gave me the following detailed account in writing of her mother's medical history:—

'My mother is in the 60th year of her age, and has been nearly twenty years a widow: she has had six children (only two are now alive), one of whom died in its birth, and great hæmorrhage was thus occasioned to her.

'As long as thirty-six years ago a very severe sore throat was caused to her by the chill of entering the Thames Tunnel. The mischief was then all out of sight, but its locality corresponds with that of the front opening of the abscess. From that illness dates her liability to occasional choking fits.

'In January '44, scarlet fever (without any rash) attacked the same part of the throat, and endangered her life. From the year '44, till the end of February '66, I never knew her to have sore throat, though she was always liable to an occasional choking fit if she spoke or was hurried in eating. For some years, in the mean time, she had much to suffer from loss of blood, and a French physician, who was called to see her at Eaux Bonnes, advised us that a cauterisation would be expedient.

'In the summer of '60 she consulted Dr. Arthur Farre, who discovered a threatening ulceration; but fearing to irritate by local applications, he decided to use tonic treatment solely (gallic acid) and after about a year the symptoms disappeared. My mother had really better health from that time than she had enjoyed before; only interrupted now and then by cold or bilious attack; but in the autumn of '65 the choking fit recurred more frequently.

'A long walk, in a bitter north-east wind, on February 24, '66, brought on a form of 'cold' to which she has ever been liable, and which we have called rheumatism in her head—violent pain, which seems to set across from the spot where the back of the head joins the neck to the junction of the

forehead and nose, and a few days after she began to find pain in swallowing, and things were more than ever apt to "go the wrong way."

'Several times this cold was renewed, and about the third week in April '66, she came to London for advice. On the 20th Dr. Morell Mackenzie forced a bougie down the gullet. He said he thought there was a slight contraction.

'When Mr. Ticehurst saw my mother on her return from a visit to the Continent, at the end of September, he was struck by the change in her look and voice. Mr. Ticehurst told me that day, under the influence of his impression of the change, loss of flesh and strength, that she "had got what would kill her." However, he became more hopeful as she improved, from having better food and properly prepared, both which had been impossible in Bohemia and in our journeys.

'She had a painful wisdom tooth extracted, but without any benefit.

'The hard gristly ridge to which Dr. Klein first called attention, in the middle of the front of the throat, seemed to melt away under the iodine which was rubbed in about five weeks with some interruptions. The most noticeable thing during this time was the tendency to nausea and faintness; the sense of smell, which was formerly dull, was strangely intensified.

'At last there was a slight enlargement perceptible on the outside (left) of the throat. About November 28 Mr. Ticehurst, noticing this, ordered us to apply a compress. We had compressed, poulticed, and fomented from the end of November to December 19, when three punctures let out a quantity of dark and offensive matter. Poultices again were applied and continued with various dressings. Before the abscess was opened, for a few days my mother could take little or nothing; for many days she lived on a little sparkling Moselle, to which we added a little chicken broth.'

My diagnosis was cancer of the œsophagus with external openings communicating with the gullet. The patient would not permit the introduction of a bougie. I ordered starch and oxide of zinc to be applied to the skin, and as much liquid food to be taken as possible. At my next visit the state of the skin around the openings was much improved. I found ample confirmation of the diagnosis in the fact that some strawberry seeds had made their appearance through the openings in the neck. I now recommended nutrient enemata which had not previously been had recourse to.

Under these the patient slightly improved, but attacks of difficulty of breathing occasionally came on, which distressed her very much. I discussed with the relatives the advisability of performing tracheotomy to relieve these, but did not press it as they entertained great objections and I could promise no permanent benefit.

May 2.—Mrs. W. was removed in an invalid carriage to her daughter's, a short distance from town, and I was requested to visit her on the 27th, her breathing having become more difficult at night. I found that she had gained flesh slightly, owing to the enemata, and during the day was comfortable, but as soon as she fell asleep laryngeal breathing came on. She declined all operative interference, and refused, as before, to permit laryngoscopic examination. I suggested to the medical man in attendance the administration of chloroform when spasm came on. She died June 1. No post-mortem examination was allowed.

In writing to me an account of the patient's death, Mr. Matthewson, of Belvedere, informed me that during the last four or five days she was quite unable to swallow, and that there was consequently no discharge from the sinuses. He remarked that 'the change in the respiration on her awaking was very striking. Standing by her bedside one would hear her breathing noisily and laboriously, but if spoken to she would quietly open her eyes, and the breathing became at once calm and natural. The effect was so immediate that it sounded as if a tap had been suddenly turned or as if the safety-valve of a steam-engine had been suddenly let down.'

The case is of necessity incomplete, owing to the impossibility of obtaining a post-mortem examination. It is impossible to determine therefore the exact form of the disease in the œsophagus (though there can be little doubt of its cancerous nature), or the extent to which the windpipe was involved. When the patient was under my observation the dyspnœa seemed to be of a spasmodic character; in her later days it assumed the peculiar character so well described by Mr. Matthewson, which would appear to indicate some affection or displacement of the epiglottis. Tracheotomy could have given but slight and temporary relief, and was not in my opinion justified under the circumstances of the case.

XIV.—*Operation for Varicocele.* By Henry Lee. *Read March* 13, 1868.

HAVING at different times published a number of cases in which the subcutaneous section of enlarged veins in the scrotum had been effectually and safely performed, I feel it a duty to mention a case in which the result was not satisfactory. This I had determined to do when I believed the case would have terminated even more unfortunately than it has done. Out of the number of cases in which I have now performed the operation of the subcutaneous section of veins for varicocele no unfavourable result beyond a local abscess, the destruction of a small portion of the skin, or some hæmorrhage easily controlled, had occurred to me, previous to the case in question. The particulars of the case may not be devoid of interest to others, as they certainly are not to myself.

Case.—A gentleman had the operation for varicocele on the left side performed on December 13, 1867. Two needles were introduced beneath the veins, and '8' ligature passed over their extremities and tied. The veins between the needles were thus isolated from the rest of the circulation. A thin sharp knife was then introduced and the isolated veins were divided under the skin. This operation is usually unattended with any hæmorrhage, as the veins are emptied by pressure previous to being commanded by acupressure. In this case, however, about a dessert spoonful of blood did escape, and it was rather of a light colour. Within two or three minutes of the operation a small oblong elevation appeared above the upper needle. I mentioned to my patient at the time that there was some tendency to hæmorrhage, and I consequently stayed with him longer than usual.

In the course of an hour I returned and found the small elevation not increased in size and the patient comfortable.

On my return home at six o'clock—I had been sent for—hæmorrhage had been going on for a couple of hours. Several towels had been soaked through, and the scrotum both above and below the needles was very much swelled. I now concluded that the hæmorrhage came from a small arterial branch which had not been commanded by the upper needle; and I was confirmed in this view by the fact of the swelling

having first appeared above that needle. I had before on two or three occasions met with arterial hæmorrhage, and had always controlled it by introducing a third needle above the incision, sufficiently deep to include the bleeding vessel. This was therefore done in the present instance; a needle was introduced sufficiently deep and '8' ligature applied over its extremities. In consequence of the swelling of the parts a considerable amount of skin was included between the needle and ligature. The hæmorrhage now appeared to be completely commanded.

14.—As there was considerable swelling of the scrotum, I feared that the pressure of the needles might interfere with the circulation through the part, and believing that acupressure had been continued sufficiently long to close any vessel that could have been wounded in this situation, I removed the third needle—i.e. the one last introduced—and the upper needle used in the ordinary operation.

15.—Swelling of scrotum on both sides. The remaining needle was removed; at night the hæmorrhage recurred to a considerable extent. Ice was applied, and it again appeared to be arrested.

16.—At 7 P.M. my patient was sick and uncomfortable. I was called from dinner to see him. Upon turning down the bed clothes, to my dismay I found him in a pool of blood from below his hips to his shoulders. Having obtained an acupressure needle as quickly as possible, I passed it deeply through the upper part of the scrotum and passed the usual '8' ligature over its extremities. This was done under the conviction that the bleeding was still arterial.

17.—Both sides of the scrotum were enormously distended and of a very dark colour, a dark-red blush extended over the right groin, and the penis was much distended and of a dark colour. Extensive incisions were now made in all these situations. The swelling of the scrotum, which was greatest on the right side (the operation having been performed on the left), was caused by an enormous effusion of serum in the cellular tissue; this, except near the median line, was untinged with blood. A dark spot appeared at the end of one great toe, and to this the patient directed attention; but as he never complained of it afterwards, it may probably have arisen from some accidental cause.

18 and 19.—The whole of the lower part of the stomach appeared bruised. The skin of the scrotum and penis were sloughing. Pulse 130; tongue clean; voice good.

I had now the advantage of a consultation with Sir William Fergusson and Mr. Prescott Hewett.

20.—Tongue brown and dry; some delirium; great perspiration; livid redness extending up left side. An incision was made in this situation.

22.—Skin of scrotum and a large portion of skin of penis mortified; bubbles of gas escape from incisions in the skin of abdomen.

Hæmorrhage occurred for the fourth time from the right side of the scrotum where a slough was separating.

23.—The skin of the abdomen where the incision was made on the 17th was regaining its natural appearance, but the redness, now no longer of the same livid hue, was extending up both sides of the chest.

26.—Hæmorrhage occurred for the fifth time from the penis, where a slough was separating. Profuse discharge mixed with bubbles of air and portions of slough from the incisions on each side of the abdomen.

27.—Redness of skin subsiding. Large discharge of white pus.

28.—Hæmorrhage occurred for the sixth time from a vessel of the scrotum, which was tied.

29.—Some fluctuation was detected over the right trochanter. The patient had complained of much burning pain in this situation. There was also considerable œdema and redness of the skin.

An incision was here made and stuffed with lint to prevent hæmorrhage.

January 1, 1868.—The tongue had now become clean. Pulse 96. Experienced every afternoon a sensation of coldness in the back. The whole of the skin of the scrotum and a large portion of the skin of the penis had now separated, leaving a very extensive healthy red granulating surface.

4.—An abscess was opened over the ribs on the left side; some hæmorrhage occurred and appeared inclined to continue. The wound was therefore plugged with lint soaked in some green dressing, and its edges transfixed by an acupressure needle.

8.—An abscess was opened over the ribs on right side, care being taken to make a very small opening. All the other incisions on the body and thigh discharge most profusely. Tongue clean; appetite very good; pulse from 90 to 100.

10.—An abscess opened near the anterior superior spinous process of the ilium on the left side.

having first appeared above that needle. I had before on two or three occasions met with arterial hæmorrhage, and had always controlled it by introducing a third needle above the incision, sufficiently deep to include the bleeding vessel. This was therefore done in the present instance; a needle was introduced sufficiently deep and '8' ligature applied over its extremities. In consequence of the swelling of the parts a considerable amount of skin was included between the needle and ligature. The hæmorrhage now appeared to be completely commanded.

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29.—Some fluctuation was detected over the right trochanter. The patient had complained of much burning pain in this situation. There was also considerable œdema and redness of the skin.

An incision was here made and stuffed with lint to prevent hæmorrhage.

January 1, 1868.—The tongue had now become clean. Pulse 96. Experienced every afternoon a sensation of coldness in the back. The whole of the skin of the scrotum and a large portion of the skin of the penis had now separated, leaving a very extensive healthy red granulating surface.

4.—An abscess was opened over the ribs on the left side; some hæmorrhage occurred and appeared inclined to continue. The wound was therefore plugged with lint soaked in some green dressing, and its edges transfixed by an acupressure needle.

8.—An abscess was opened over the ribs on right side, care being taken to make a very small opening. All the other incisions on the body and thigh discharge most profusely. Tongue clean; appetite very good; pulse from 90 to 100.

10.—An abscess opened near the anterior superior spinous process of the ilium on the left side.

having first appeared above that needle. I had before on two or three occasions met with arterial hæmorrhage, and had always controlled it by introducing a third needle above the incision, sufficiently deep to include the bleeding vessel. This was therefore done in the present instance; a needle was introduced sufficiently deep and '8' ligature applied over its extremities. In consequence of the swelling of the parts a considerable amount of skin was included between the needle and ligature. The hæmorrhage now appeared to be completely commanded.

14.—As there was considerable swelling of the scrotum, I feared that the pressure of the needles might interfere with the circulation through the part, and believing that acupressure had been continued sufficiently long to close any vessel that could have been wounded in this situation, I removed the third needle—i.e. the one last introduced—and the upper needle used in the ordinary operation.

15.—Swelling of scrotum on both sides. The remaining needle was removed; at night the hæmorrhage recurred to a considerable extent. Ice was applied, and it again appeared to be arrested.

16.—At 7 P.M. my patient was sick and uncomfortable. I was called from dinner to see him. Upon turning down the bed clothes, to my dismay I found him in a pool of blood from below his hips to his shoulders. Having obtained an acupressure needle as quickly as possible, I passed it deeply through the upper part of the scrotum and passed the usual '8' ligature over its extremities. This was done under the conviction that the bleeding was still arterial.

17.—Both sides of the scrotum were enormously distended and of a very dark colour, a dark-red blush extended over the right groin, and the penis was much distended and of a dark colour. Extensive incisions were now made in all these situations. The swelling of the scrotum, which was greatest on the right side (the operation having been performed on the left), was caused by an enormous effusion of serum in the cellular tissue; this, except near the median line, was untinged with blood. A dark spot appeared at the end of one great toe, and to this the patient directed attention; but as he never complained of it afterwards, it may probably have arisen from some accidental cause.

18 and 19.—The whole of the lower part of the stomach appeared bruised. The skin of the scrotum and penis were sloughing. Pulse 130; tongue clean; voice good.

I had now the advantage of a consultation with Sir William Fergusson and Mr. Prescott Hewett.

20.—Tongue brown and dry; some delirium; great perspiration; livid redness extending up left side. An incision was made in this situation.

22.—Skin of scrotum and a large portion of skin of penis mortified; bubbles of gas escape from incisions in the skin of abdomen.

Hæmorrhage occurred for the fourth time from the right side of the scrotum where a slough was separating.

23.—The skin of the abdomen where the incision was made on the 17th was regaining its natural appearance, but the redness, now no longer of the same livid hue, was extending up both sides of the chest.

26.—Hæmorrhage occurred for the fifth time from the penis, where a slough was separating. Profuse discharge mixed with bubbles of air and portions of slough from the incisions on each side of the abdomen.

27.—Redness of skin subsiding. Large discharge of white pus.

28.—Hæmorrhage occurred for the sixth time from a vessel of the scrotum, which was tied.

29.—Some fluctuation was detected over the right trochanter. The patient had complained of much burning pain in this situation. There was also considerable œdema and redness of the skin.

An incision was here made and stuffed with lint to prevent hæmorrhage.

January 1, 1868.—The tongue had now become clean. Pulse 96. Experienced every afternoon a sensation of coldness in the back. The whole of the skin of the scrotum and a large portion of the skin of the penis had now separated, leaving a very extensive healthy red granulating surface.

4.—An abscess was opened over the ribs on the left side; some hæmorrhage occurred and appeared inclined to continue. The wound was therefore plugged with lint soaked in some green dressing, and its edges transfixed by an acupressure needle.

8.—An abscess was opened over the ribs on right side, care being taken to make a very small opening. All the other incisions on the body and thigh discharge most profusely. Tongue clean; appetite very good; pulse from 90 to 100.

10.—An abscess opened near the anterior superior spinous process of the ilium on the left side.

11.—Two collections of matter on left side of back below the blade bone. One of these was opened by a small incision, and the opening plugged with lint. The other collection was not opened as it appeared to discharge itself through the opening, several inches distant, made on the 4th.

16.—The redness had now disappeared from the right side. Profuse discharge still continued from the abscess in the left groin; all the sloughs had now separated, and the scrotum was covered by healthy granulations.

18.—The matter still welled up from the left groin as from a lumbar abscess.

19.—Pulse 80.

22.—An abscess opened over the pubis on the left side. The patient sat up, and I am thankful to say has had no unfavourable symptom since. In this case the hæmorrhage, the diffuse cellular inflammation, the sloughing of the skin, the erysipelas and its consequences, presented a combination and succession of unfortunate circumstances such as are seldom met with. These untoward complications rendered the effects of the operation very different indeed from that which was intended. The intention here was to induce union of the divided veins and consequent obliteration of their canals. This union, as, I believe, has been satisfactorily shown elsewhere ('Med.-Chir. Trans.' vol. l.), is effected not by effusion of lymph from the lining membrane of the veins, but by a material deposited from the blood, rich in white blood-corpuscles, and by the adhesive matter which these generate. The obliteration of the divided veins has followed in a large number of cases upon which I have operated, and no absorption of matter has occurred in any case where this operation has been performed for varicocele. Even in the present case, complicated by every variety of local mischief, there was no indication of any absorption through the veins. The only symptom of the kind was the discoloured patch on the extremity of the toe; but as no further attention was directed to this point, it must have been a slight bruise made more apparent by the hæmorrhagic tendency which obtained in this case. On making enquiry upon this point, it appeared that once when a child this patient experienced unusual hæmorrhage after the loss of a tooth, and that his brother was subject to copious and repeated bleeding from the nose.

Unfortunate as were the results in this instance, it does not appear that the veins were in any sense implicated in the origin of the mischief. The first accident that occurred was

arterial hæmorrhage; the cellular tissue then became distended with blood; erysipelas, accompanied by decomposition of the effused blood, followed. Through all these changes and adverse circumstances, the divided veins were commanded by the acupressure needles, their channels closed, and the absorption of decomposing matter or vitiated secretions by their means prevented. I may mention that this patient took large doses of the sulphite of magnesia during his illness. Dr. Polli, of Milan, as is now well known, attributes great virtue to the sulphites in preventing or checking morbid ferments in the blood. I have given them in a fair number of cases, and I must confess that I have not been able to make up my mind as to their efficacy. In the present case, I certainly think that my patient was indebted for his safety more to the closure of the veins by acupressure than to medicine; but I am well aware that many may attribute his safety to his unassisted natural powers rather than to either of these. Inasmuch as I believe we learn more from unsuccessful cases than from successful ones, I have ventured to bring this instance of the unfortunate results which may follow a very slight operation before this Society; the origin of those unfortunate results in the present case having been, as far as can be ascertained, the wound of a small artery in a patient predisposed to hæmorrhage.

XV.—*Cases of Parasitic Disease of the Nails, associated with different Parasitic Affections of the Scalp and Body.* By C. Hilton Fagge, M.D. *Read March* 13, 1868.

Case I.

S. S., æt. 11, admitted into Guy's Hospital, under the care of Dr. Wilks, November 2, 1867, affected with tinea favus in its most severe form. She was a pale-faced, sickly-looking girl. Her hair was cut short, and what existed of it was matted together, the scalp being covered with crusts, a few of which projected beyond the hair on to the forehead. Each eyebrow presented well-marked cups of favus. On the lower limbs, from the buttocks downwards, were masses of the fungus, forming rocky, irregular elevations. These, like the scalp, were crowded with pediculi and their ova.

She stated that the disease had existed for more than four

years. It had been considered to be 'rupia.' Her eldest sister many years ago had had the same complaint. She had recovered, but was bald.

Two sisters, younger than herself, had died with the disease, 'having it all over their bodies.'

The nail of the little finger of the left hand presented a peculiar yellow discoloration. This did not affect the whole nail, but stopped suddenly about one-eighth of an inch from the root. The diseased part of the nail was dry and cracked, and it was detached from the bed, and only extended about half-way towards what might have been the position of its free edge. The anterior part of the bed of the nail was covered with an irregular, rough, yellowish or brownish mass. The other nails of the fingers and toes were healthy.

The girl stated that the nail had been affected only two or three weeks; and the correctness of her statement appeared probable from the rapidity with which the disease was afterwards observed to extend. At the end of ten days it was found that the yellow coloration had reached to the posterior edge of the nail. Two days later the lamina of the nail had become quite loose, and was easily removed. A fresh lamina soon began to form, and by the end of the month had acquired some size. It was of a brown colour, and had no adhesion to the bed, which was itself covered with strips of nail-substance, yellow with the fungus.

The diseased part of the nail could be cut with a scalpel much more readily than the healthy. On examining it with a microscope, it was found to contain beautiful specimens of the achorion. Spores and tubes lay within the nail-substance, interspersed between, and penetrating among, its cells. The form presented by the fungus varied at different spots. Towards the root of the nail, where the affection was advancing (at the time when the root itself was healthy), it consisted chiefly of spores crowded together, and of a small number of simple or slightly beaded tubes. Towards the free edge of the nail, where the affection was already of longer standing, branching tubes of a much more complex form were observed. They were at some points very narrow, at others they presented nodular enlargements, often containing little bright bodies and minute granules. Some of these tubes appeared to have a distinct pale-green colour.

For some time it seemed that the new nail which had formed was growing healthily from its roots; but on February 13 it is noted that the 'outer shell of the nail has come off, and a white irregular mass is seen occupying the

whole bed, excepting about two lines' breadth at the root, where the nail is red but entire.' On March 16 it was directed that the nail should be scraped down as far as possible, and that a lotion of hyposulphite of soda (ʒj.—℥j.) should be kept constantly applied to it. It would appear, however, that the treatment was not systematically carried out, and the fungus continued to attack the nail as fast as the latter grew. After a time, the application was discontinued. *On May 14, the girl was transferred to the clinical ward under Dr. Fagge's care. By that time the nail had grown to its usual length. About half of it was affected with the fungus, and presented the characteristic yellow colour. The diseased part was separated by a sharply-defined line from that which was healthy. Afterwards the fungus has very gradually penetrated further and further, so that by the middle of June it reached to the root of the nail on its inner side, the affected part being perfectly loose. The methodical application of the hyposulphite of soda was so successful in the other cases which are recorded in this paper, that, on June 22, Dr. Fagge returned to its use. In order to test to the utmost the power of this salt to destroy the fungus, the diseased part of the nail was not cut away, but left. A piece of lint was soaked with the lotion of the hyposulphite, and this was kept constantly applied to the nail, evaporation being prevented by a covering of gutta percha. This appears to have had the effect of curing the disease entirely. The nail has now (July 20) grown to $\frac{1}{6}$ of an inch from its root, and looks perfectly healthy, being only slightly rougher than natural. The masses of nail-substance on the bed also seem to be free from the fungus. No trace of it can be found even in the loose part of the nail, which was formerly yellow, but is now white, and which has just been removed. On the body generally the disease was cured in a few days and without much trouble. Soon after admission, she was ordered a warm bath, which removed most of the crusts from the limbs. To the red patches which were left, as well as to the scalp, there was applied on lint a lotion containing an ounce of carbolic acid to seven ounces of glycerine. Two days later it was found that she was very poorly. She had been very sick, bringing up a quantity of greenish vomit. She looked pale; her eyelids were puffy; she was sleepy. Her tongue was tremulous and had a yellow fur upon it. Pulse 120. These symptoms were ascribed to

* Notes added after the reading of the paper.

the application of the carbolic acid.* It was, therefore, discontinued for a time, and in two days she was pretty well again. A few cups of favus occasionally showed themselves on the seats of former patches, but these were easily got rid of, and for a long time past there has been no return of the disease on the trunk or limbs.

The eyebrows, again, were freed of the disease without much difficulty. The crusts were removed soon after her admission. For a short time fresh ones kept forming, but this has long since ceased to be the case, although epilation has never been performed. The favourable result seems to be due to the fact that the eyebrows had only been affected a short time, so that the fungus probably had not penetrated into the interior of the hairs of these regions.

The cure of the disease on the scalp has been attended with much greater difficulty, and is even yet incomplete. It was, in the first place, by no means easy to remove the crusts. However, after a time, crusts and hair were removed together, exposing a red, moist, bleeding surface. The carbolic acid lotion was applied to this, and the skin gradually acquired more healthy characters. The top of the scalp, indeed, became almost entirely free. The skin on this part was found to be white and cicatricial, and a few black twisted hairs were all that grew upon it. The baldness of this region appears to be permanent and incurable. Various applications were used to the scalp: a mixture of glycerine (℥j.), borax (ʒiij.), and ol. myrist. expressum (℥ss.); the lotion of hyposulphite of soda (ʒj.—℥j. of water); the lotion of carbolic acid with glycerine (1 part in 8). At one time, the lotions last named were used simultaneously, the one to the left, the other to the right side of the head: the hyposulphite of soda appeared to do the more good of the two. On May 14, however, when she was transferred to the clinical ward, a considerable part of the scalp was covered with crusts. Systematic epilation was now commenced and carried out by Dr. Fagge's clinical clerk, Mr. R. Rendle, the head being also well washed each day with an irrigating apparatus and a solution of borax.

In Dr. Fagge's opinion, the necessity for epilation was established by an observation which is, he thinks, in part original. Many writers mention that the fungus of favus

* Some cases in which serious and even fatal effects were caused by the external application of carbolic acid were recorded by Mr. Machin in the 'British Medical Journal' for March 7, 1868.

penetrates the hair. Dr. Hughes Bennett, in particular, gives drawings of hairs containing numerous jointed tubes running in their length. Within the shaft these tubes are often empty, or rather contain air, bubbles of which may be seen with the microscope to run along their interior and escape by the cut extremity of the shaft. In the root of the hair, the condition of the fungus-tubes has not, Dr. Fagge thinks, hitherto been carefully described. They are here exceedingly delicate, so that they are overlooked by an inexperienced observer, but they have a peculiar double contour, which is very characteristic. They terminate in free, closed, rounded extremities. These are, in every specimen, seen to be within the soft substance of the hair's root; it is, therefore, evident that while the hair is constantly growing and pushing outwards, the fungus-tubes are themselves growing in the opposite direction. In cases in which active local treatment is being carried out, it is quite rare to find spores (or any of the well-known appearances of the achorion) in or about hairs affected in this way. It would seem that the fungus is only able to maintain a bare existence under such circumstances; but its vitality is preserved, and it is ready to germinate actively as soon as conditions more favourable for its growth arise. It is hardly to be expected that any parasiticide should be able to reach these tender radicles, embedded deeply within the roots of the hairs. It is quite intelligible that epilation should afford almost the only means of obtaining a permanent cure of the disease.

It is an interesting fact that the nurse who attended to this child became affected with 'epidermic favus' of one forearm. A minute red spot first appeared, and as it gradually got bigger its centre became depressed and slightly scaly. On microscopic examination of the scales from the spot affected, tubes of the fungus were plainly seen.

The nurse would not allow the patch to remain for further examination, but destroyed it at once with strong nitric acid.

The characters of the patch or small ring in the case of this nurse appeared to be precisely those described by Dr. M'Call Anderson and others, as belonging to the commencement of 'epidermic favus.' The patch, however, was very like one of tinea circinata.

This bears upon the question as to the identity or non-identity of the different vegetable parasites. The view maintained by Hardy and others, that the parasite in sycosis is the same as that in tinea tonsurans, rests in great part on

the fact that each of these diseases is frequently accompanied by, and gives rise to, a 'tinea circinata.' But there appears to be no proof that the circinate affection is the same in the two cases. And the fact that the fungus of favus produces a similar appearance might fairly be urged in favour of the opinion (which in itself appears very probable) that more than one fungus may be capable of growing on the cutaneous surface in a centrifugal manner, and so of producing an apparent 'tinea circinata.'

It is, however, the main object of this communication to furnish other evidence in support of the identity of some of the vegetable parasites.

Case II.

H. H., æt. 10, admitted into Mary Ward, under the care of Dr. Hilton Fagge, February 25, 1868.

Twelve months ago she had been brought to Dr. Fagge as an out-patient, suffering from tinea tonsurans of the scalp. About the same time several members of her family (including her father and mother and two other children) had been affected with tinea circinata. The tinea tonsurans of the scalp, which formed a large patch, never got well. About four months ago it was noticed that one of the nails presented a peculiar appearance.

On admission there was a large bald patch on the back of the head. Here the skin was red, shiny and swollen; and a watery or puriform discharge was oozing from it at various spots, drying up here and there into greyish-yellow crusts. The affection presented the characters of that which is described by Mr. Wilson as 'kerion,' and which Dr. Tilbury Fox* has recently stated to be nothing more than an aggravated and inflamed form of tinea tonsurans. There was not, either then or at a later period, anything resembling the appearance of favus. On microscopic examination of the hairs, it was found that they were enlarged, split up, ragged, opaque, and loaded with spores. Dr. Fagge exhibited to the Clinical Society a drawing of one of the hairs, which presents all the appearances seen in tinea tonsurans, except perhaps that the spores have a greater tendency to cohere together in lines than is often seen in this disease, but not more so than Dr. M'Call Anderson† has recently figured, in

* 'Lancet,' 1868, vol. i. p. 156. † 'Edin. Med. Journ.' June, 1868.

representing a hair from a case of sycosis. In the crusts a few spores and jointed tubes were found, but only in small numbers.

Towards the front of the head numerous small bald spots existed. These were perfectly devoid of hair, and no broken stumps were present on them. They therefore had the appearance of tinea decalvans, rather than that of tinea tonsurans, and this view of their nature was supported by the fact that the hairs round them were found to have atrophied bulbs, such as are seen in that disease. These smaller spots on the head of H. H. were quite like those observed on the head of her sister, whose case will be subsequently described. A drawing exhibiting the microscopic appearances of the atrophied bulbs of hairs taken from them was shown to the Society.

The affected nail was of a yellowish-brown colour. The yellow was perhaps hardly so bright as in the case of S. S., but in other respects the resemblance was striking. The lamina of the nail was broken off, so that it was much shorter than natural. Its edge was irregular. Anteriorly to this edge, the part of the nail which grows from the bed was exposed. The diseased nail was softer and cut more readily than healthy nail. Microscopically it was found to contain fungus elements in large quantity. These took the form chiefly of beautiful beaded tubes, crossing one another at different depths, between the layers of cells of nail substance. A drawing, in which they were represented, was shown to the Society.

The medicine ordered for this child was at first ol. morrhuæ (in a dose of ℥ss. twice daily), and afterwards mist. quiniæ. Water-dressing and then poultices were applied to the scalp; and subsequently incisions were made into the more prominent of the shining red spots, giving exit to a clear yellow fluid rather than to pus. The most effective agent, however, in curing the disease appeared to be the removal of all the hair, which on April 6 was cut quite close and shaved. From this time the affection of the scalp gradually disappeared. She was ordered to apply a mixture of two parts of olive oil and one part of the ol. myristicæ expressum. Dr. Fagge saw her last on June 16. The skin was then quite sound, and hair was growing over all the patches which had been bald. It appeared as if the disease would ultimately leave no marks of its presence.

The affected nail was in the first instance cut down as far

as possible, and a lotion of bichloride of mercury (2 grains to the ounce) was applied. As it grew, however, it again presented a diseased appearance. The ung. æruginis was then used locally, but with no decided benefit. Ultimately a lotion containing a drachm of the hyposulphite of soda to the ounce of water was ordered, the nail being kept constantly moist with it. On June 2, it was found that the lamina had become detached from its bed to within $\frac{1}{16}$ inch of the root. All the loose part was cut away, which was easily done with a scalpel. The bed of the nail was hard, and seemed quite healthy. By June 16, the nail had grown to some extent. Dr. Fagge has since heard, however, that the disease is not completely eradicated.

Case III.

E. H., æt. 12, admitted into Guy's Hospital, March 3, 1868. She is the sister of the patient whose case has just been described. Last year, when several members of the family had tinea circinata, she was affected, but only slightly; she had recovered by the month of June. Her mother states that one of this child's nails began to have an altered appearance about four months since. The root, she says, first became yellow; the yellowness slowly spread towards the free border of the nail, and the nail became split up. Five or six weeks later 'lumps' formed under the scalp, which were considered to be due to scurf. Then the hair came off in round patches, at the back and crown of the head. There was never any discharge from these, and there was very little appearance of scabs.

On admission there were at the back of the head numerous small bare patches, some round, others of an irregular shape.

The largest of these was $\frac{3}{4}$ inch in diameter. Under some of the smaller ones could be felt a hard substance, of the same form as the patch itself, but smaller, movable on the cranium, and slightly so beneath the skin. The hairs round these patches were fine and delicate; they were atrophied and devoid of pigment, as in cases of tinea decalvans. The head was scurvy, but in other respects healthy. There was not the slightest appearance either of tinea favus or tinea tonsurans.

The nail was yellow, looking almost as if stained with nitric acid. The lamina growing from its root was absent over the distal third, exposing a rough surface, ribbed longitudinally.

The treatment consisted in the application of a lotion of bichloride of mercury to the scalp for a short time, and of the mixture of olive oil and ol. myristicæ expressum. Before she left the hospital (early in May), the hairs had grown again, so that no traces of the bald spots remained. Up to the present time her head has remained healthy.

Various methods were tried for the nail. The diseased parts of its substance were several times, as far as possible, removed. In the first instance a lotion of carbolic acid and glycerine (1 part to 7) was used. This caused considerable smarting and inflammation. It was therefore discontinued, and subsequently the ung. æruginis was applied. But the disease continued to reappear as the nail grew, until the same treatment was adopted which proved successful in the case of her sister. The affected part of the nail was most carefully removed, and a lotion of the hyposulphite of soda (ʒj.—℥j.) was kept constantly applied. The effect of this was that the lamina of the nail became detached from its bed to within $\frac{1}{16}$ inch of its root. When she was last seen (on June 16), the nail had already begun to grow from its root, and presented not the slightest indication of the disease; the bed of the nail was also hard, and appeared to be healthy.

Remarks.—The presence of a vegetable parasite in the substance of the nail is but rarely observed, and the instances of it referred to in English medical works are derived chiefly from foreign sources. The earliest recorded case appears to be that of Mahon of Paris, who became affected while engaged in treating tinea; he regarded the affection as allied to favus, but did not know its real nature. Since then French writers have recognised this as one of the forms of favus. In Germany a fungus was discovered by Meissner in the nails of an old man, which were much altered in appearance, resembling claws, and being thick, broad, very convex in shape, and striped with a yellowish-brown or brown colour. Virchow has recorded some other instances in which a vegetable parasite was found in the toe-nails of adults. From the drawing given by Meissner it would appear that the fungus found by him resembled the achorion of favus rather than any other of the species which so many writers regard as being distinct from it. But neither in his case nor in those of Virchow was any connection traced with parasitic disease of other parts of the body, and the appearance of the affected nails was very different from that seen in cases where true favus of the nail has been observed.

Now, in all the three cases which form the subject of this communication, the character of the affection was very similar; and it differed very markedly from that described by Meissner and Virchow. Instead of the whole nail being convex, thick, uneven, and streaked with yellow or brown lines, the fungus seemed to destroy the lamina, which became detached from the bed and terminated in a jagged border about half-way from its root. In the first case (one of favus) the process was observed almost from its commencement. The affected part of the nail was of a sulphur-yellow colour, sharply limited from that which was healthy. The line of demarcation was watched day by day as it gradually encroached upon the normal nail-substance, and finally disappeared beneath the fold overlapping the root. This by no means accords with the account of favus of the nail given by Bazin and those who have followed him. The writer just mentioned speaks of the lamina as becoming, in the first instance, thickened, and of a dirty brownish matter being seen through its transparent substance. Subsequently, according to him, the nail becomes thin at certain points as if it were gradually worn away by the action of the fungus beneath it, and after rather a long time the nail is completely perforated. It is evident from this description that Bazin supposes the parasite to lie on the under surface of the lamina. In the case above recorded, it certainly was interstitial, penetrating the substance of the nail, occupying its whole thickness, and gradually invading it further towards its root.

In the other two cases described in this paper, the affection of the nail presented very similar characters, except that its progress was not watched from so early a period. The children, however, presented no trace of favus of the scalp or of any part of the body.

One of them (H. H.) had for months been affected with tinea tonsurans, as was proved by microscopical examination of the hairs taken from the diseased patches on her head, and as had also been distinctly recognised some months before when she had been brought to the hospital on that account, and when tinea circinata had attacked several other members of her family. At the time of her admission as an in-patient, with parasitic disease of the nail, there were also a few spots on the head, resembling those of tinea decalvans rather than of any other affection.

The case of the third child (E. H.) is still more remarkable. She, like her sister, was free from favus, so far as could be ascertained; but, unlike her sister, she presented no tinea

tonsurans, and the only affection of her scalp which was ever discovered was one resembling somewhat a tinea decalvans.

There could hardly be any doubt that the disease of the nails in these two children had been set up by the transference of the parasite directly from the head in scratching. Spontaneous affections of the nails due to a fungus are (as has been stated) very rare, and the appearances observed in the instances recorded by Meissner and Virchow were very different from those seen in the cases now under consideration. Careful enquiry was made as to the possibility of the girls having caught the disease from other children, or from cats or other animals. The only cat with which E. H. and H. H. ever used to play was brought up to the hospital and was found to be perfectly free from favus.

So far as Dr. Fagge is aware, the nails have not hitherto been observed to be affected in any instance of either tinea tonsurans or tinea decalvans. From this point of view alone the cases above recorded are of interest, but still more so from the circumstance that the disease of the nail in each was so like that observed in the first case, in which the disease of the scalp was unmistakably favus. The observation lends very strong support to the view taken by Hebra and by Tilbury Fox, that the fungi in the different 'parasitic' cutaneous diseases are not really distinct species but mere varieties, capable, under certain unknown conditions, of passing the one into the other. The evidence seems to be much more weighty than that derivable from the mere co-existence of two or more forms of tinea in the same patient. This occasionally happens, and has been supposed by many to be a mere coincidence, for it seems likely that the conditions favourable to the growth of one species of parasitic fungus would be favourable to the growth of other species likewise. But this does not apply to the nail, which is so rarely the seat of changes of this nature. It would be most extraordinary that two sisters should each have one nail affected with a fungus, and that they should at the same time present a parasitic disease of the scalp, and yet that these circumstances should bear no causal relation to one another. It is true that the existence of a vegetable parasite on the scalp was proved only for one of the two children; but it is at least probable that the other child had another form of it (that belonging to tinea decalvans); nor is there anything unlikely in the supposition that her nail might have been affected by contagion from the scalp of her sister.

The cases are further interesting from the success of the treatment adopted. Hebra is understood to have expressed a doubt whether any parasiticide exists. But it appears to be beyond question that the application of the hyposulphite of soda destroyed the life of the fungus in at least two of these patients; and this notwithstanding that the plant was embedded in the horny substance of the nail.

XVI.—*A Case of Temporary Loss of Voice successfully treated by Galvanism.* By William Marcet, M.D. *Read March* 27, 1868.

WILLIAM JONES, aged 47, a hawker of umbrellas and cloth caps for the last thirteen years, formerly known, I understand, for his powerful voice. His mother died of phthisis, and his father is still living in a very weak condition. A sister died lately, although not apparently from disease of the lungs. She spoke in a very low whisper on several occasions for three or four months at a time. He is subject to occasional hoarseness in winter. Twelve years ago was treated for pleurisy of the right side, in the Victoria Park Hospital, where he remained over three months; and continued attending as an out-patient for two years, after which time he had quite recovered. On October 1, 1866, he had a severe fit of coughing, lasting for three hours; his tongue then began to enlarge, and he observed a hard mass (probably a swollen gland), which had formed under the right lower jaw. Within an hour after he had left off coughing, the tongue had reached such a size as nearly to fill the cavity of the mouth. His power of speech was then for the first time considerably interfered with, his tongue was benumbed, and he had in a great measure lost the sense of taste. A medical Practitioner at Clapham, who saw him at the time, said he was suffering from inflammation of the lungs. Three days after the first symptoms set in, he began to expectorate blood, and was troubled with hæmoptysis for two months. The condition of the tongue and swelling under the jaw persisted for about a month, and then disappeared with the return of the sense of taste to its normal condition. His speech became rapidly worse; he had for about three months the power of uttering sound, but not of forming words, and did not, consequently, speak in a whisper.

But gradually he found it impossible to produce sounds; the last being high notes in the scale, uttered in quick succession, and this state lasted from December 1866 until February 26, 1868, when I saw him.

For about fifteen months his general health has been tolerably good; but up to February 16 of the present year he has been totally dumb—not one word or the least sound, with, perhaps, the exception of a slight hiss, has he uttered for a year. He has also observed his power of swallowing to be much diminished, and this state of dysphagia has lasted about as long as the dumbness. At the same time he was also very frequently troubled with spasmodic contractions of the pharyngeal and laryngeal muscles, which were produced by the slightest cause, as, for example, the least attempt to speak. He would then throw his head backwards, and place his hand upon his neck, grasping the larynx, with an expression of pain. He has continued obtaining his living as a hawker, presenting a card to his customers, on which was written, that he could not speak although he could hear, and conveying his answers on a slate.

The patient has sought medical advice for his dumbness, without relief, at Clapham, at Guy's Hospital, Middlesex Hospital, and the Victoria Park Hospital; but, in despair, he has consulted nobody for the last nine months, until lately, when he applied as an out-patient at the Brompton Hospital, mainly for relief on account of his chest. I made a laryngoscopic examination of his larynx, and could find no apparent mischief of any kind beyond a slightly pendulous condition of the epiglottis. The vocal chords were quite sound, and their motions in the act of respiration appeared perfectly free. I requested him to try and speak, and observed he had no power to raise the tongue against the palate; he tried to move the tongue and lips, with the object of speaking, but was immediately seized with a laryngeal spasm, and no sound was emitted. The physical signs of the chest, investigated a few days later, were as follows: On both sides, anteriorly, rough breathing, with loud expiration; no moist or dry sounds, and no dullness on percussion. Posteriorly, on the right side, slight dullness, but to a very limited extent, near the end of the spine of the scapula, where he says he occasionally feels a sharp, shooting pain darting through the chest; respiratory murmur very deficient at that spot, elsewhere posteriorly breathing rough, but no dullness. He is not emaciated, and exhibits no particular debility.

Having read of a number of cases of aphonia from functional paralysis of the muscles of the glottis treated successfully by Sir Duncan Gibb and Dr. Morell Mackenzie by the application of galvanism to the vocal chords, I thought of trying what galvanism would do in the present case, and, by means of Mackenzie's curved laryngeal galvaniser, I passed a tolerably strong interrupted current (from a one-cell Smee's battery) between the back of the tongue near the epiglottis and the thyroid cartilage. After rather less than a quarter of an hour the patient suddenly sung out a note in a high key, followed by others short and in rapid succession; and with an expression of infinite delight he pronounced, with some trouble, the word 'Yes.' Nearly immediately afterwards, he said tolerably distinctly, 'I can speak.' In less than twenty minutes later his speech was, I may say, quite restored. During that period I passed the galvanic current on three or four occasions for a minute at a time; after each application the voice was improved.

On requesting him to analyze his sensations, he said that the first feeling of returning power of speech commenced at the upper part of the right side of the chest; this he felt as a fluttering under the right sterno-clavicular articulation, proceeding upwards along the windpipe, and stopping at the throat at a point corresponding to the vocal chords, where he had a feeling which he described as 'pulling,' and immediately afterwards he pronounced the first words.

I had previously observed, that on percussing the right side of the chest near the apex, a spasm of the laryngeal muscles was produced; after the power of speech had returned, this phenomenon diminished rapidly. The mere touch of the larynx while he was dumb sufficed to bring on the spasms, but now this effect quickly diminished, and two or three days afterwards the spasms could seldom be induced, and were but very feeble.

Having procured him some food, he told me he could now swallow quite easily and comfortably. He remained with me for about three hours that day after his speech was restored, speaking quite plainly, and only finding some difficulty in recollecting words after having been speechless for so long, and I at once wrote out the notes of his case.

Since then he has returned to me several times. I have again galvanized him once, but his voice does not require it; he speaks quite fluently and in a natural tone.

I have borne in mind the circumstance that this might be

a simulated case, a presumption which, however, does not appear to me consistent with the medical history of the patient; but, in order to obtain additional security on this point, the patient at my request has procured for me a number of signatures, amounting to twenty-four, to the following document:—

'I have known William Jones, of Clapham, to be totally dumb, and unable to utter the slightest sound (beyond, perhaps, a mere hiss) for a period of over one year, ending in the last week of February of the present year.

'March 2, 1868.'

The signatures are all, I understand, of respectable inhabitants, each of whom has appended his address.

This case appears to me to be one of paralysis of the recurrent laryngeal and glosso-pharyngeal nerves from overstraining of the voice; it is obviously not one of hysterical aphonia.

Report on Dr. Marcet's *Case. Read March* 27, 1868.

The Committee appointed to consider and report on Dr. Marcet's case of dumbness, cured by galvanism, have made extended and careful enquiry into it.

With reference to the essential symptom of the case, they find (1) reason to believe that the man did not speak for many months: as to (2) the subjective condition of ability to speak, the fact cannot be brought to direct proof. The man's general veracity has been tested by various enquiries independently made, with the result that most of his statements concerning his condition and doings (though not all of them) are confirmed. It is evident that he has used his infirmity (whether real or assumed) for the purpose of obtaining charitable relief.

The Committee submit the case to the consideration of the Society, with a confession of their inability to form a judgment on its nature. It has, however, been the subject of such careful examination, first by Dr. Marcet, and now by themselves, that they think it should be placed on record for comparison with any similar instance in the future.

George Buchanan.
W. S. Church.
E. Symes Thompson.

XVII.—*On a Case of doubtful Chronic Rheumatic Arthritis.* By CARSTEN HOLTHOUSE. *Read March* 27, 1868.

REBECCA MONK, æt. 52 (widow), healthy-looking and well nourished, and who has always enjoyed good health, was admitted into the Westminster Hospital, under my care, on the 3rd of the present month (March 1868), in the following condition:—

Right Hip.—On placing her flat on her back, the thigh is seen to be slightly adducted and flexed on the trunk at an angle of 110°, and it cannot be extended beyond this; on attempting to do so, the body is raised from the bed and strongly arched forwards, the spine being incurvated so as to form a deep concavity between the bed and the back. The thigh is not absolutely anchylosed. At the above angle, there is a little joint movement in the sense of increased flexion; but its amount is difficult to determine, owing to the mobility of the spine and pelvis, and the difficulty of fixing them. For the same reason, it is uncertain whether there is any joint movement in the sense of abduction, adduction, or rotation. I am doubtful also about the existence of crackling or crepitus; on my first examination of the limb it was certainly heard; but as subsequent examinations have failed to elicit it, it may have proceeded from the simultaneous movement of other joints, in which it undoubtedly exists. A line drawn from the anterior superior spine of the ilium to the top of the great trochanter, forms a right angle with the long axis of the body. Another, drawn from the same point of the ilium to the lower border of the patella, both limbs being placed as nearly as possible in the same position, shows this thigh to be about 1″ shorter than the left. No osteophytes are detectable in the neighbourhood of the joint, and there are no marks of suppuration having ever taken place—the soft parts around are perfectly healthy; there is no pain or tenderness on pressure, nor any in bearing weight on the limb, or in moving it.

Left Hip.—The movements of this joint, though considerable, are more limited than those of a healthy articulation; thus, it cannot be extended beyond an angle of about 140°, and the movements of rotation, abduction, and adduction, are still more imperfect. Moreover, they are always accompanied with pain in the knee, and occasionally with

that peculiar crepitus so characteristic of, though by no means peculiar to, chronic rheumatic arthritis. No bony or other hard bodies can be felt about the joint, and there is no implication of the soft parts in the disease. The whole limb, however, is sensibly weaker than the other, and though its range of motion is so much greater, the power of moving it is feeble.

Knee-joints.—The right is slightly inclined inwards, but its functions are in all respects perfect, though it formerly participated in the painful cramps which affected the hip and whole limb. The left is, to outward appearance, perfectly healthy, and the skin covering it of a natural colour and temperature; its movements likewise are free, and have their normal range, but are attended with pain, which is referred to the insertion of the ligamentum patellæ, and to the upper margin of this bone. A very decided and audible crepitus attends every movement of this joint. No bony prominences can be felt about the edges of the patella or the margins of the femoral condyles. There is no wasting of the legs or thighs, but the right limb is slightly smaller than the left.

When the patient is erect, the left foot is placed flat on the ground, while the right is supported on the phalanges and the extremities of the metatarsal bones, the heel being at some distance from the ground. The nates are thrust backwards, and the lumbar spine deeply incurvated. Progression is both difficult and painful, and can only be accomplished with the aid of two sticks; but when the patient is in bed, or sitting, or as long as the left limb is not moved, or no weight borne upon it, she is free from pain.

History.—Has been lame with the right limb for nine years, and the two last so lame as to be obliged to use a stick. Still, she has been able to perform the duties of a cook up to five weeks ago, when, on walking across the kitchen, her stick slipped, and she fell down, but does not exactly know what part she struck in her fall. On being helped up, she found herself unable to sit down, from a pain in the left hip-joint, which prevented her bending it in the slightest degree; she was therefore assisted into bed, where she remained ten days. At the end of this time, being able to sit up, she was got out of bed, and managed to hobble about on crutches, though the limb was still painful, and she could scarcely bear any weight on it. In this condition she was admitted into the Westminster Hospital.

The original lameness in the right limb came on without

obvious cause, as a cramp affecting the whole limb: this would last for about ten minutes, and then go off. About every two or three weeks, the patient had a recurrence of these attacks, and was subject to them for three years, when they entirely left her. In the meanwhile, though she was not conscious of it herself, her neighbours observed that she walked lame, and this lameness gradually increased, till two years ago it became so bad that she was obliged to have recourse to a stick.

Family History.—Of this she can gave me no details, save that her mother used, occasionally, to suffer from supposed rheumatic pains in the shoulders.

Treatment.—Since her admission she has taken 10 grs. of the compound ipecacuanha powder at night, and a mixture containing xv. minims of colchicum wine in 1 oz. of acet. of ammonia mixture, three times a day.

The joints have also been rubbed with an embrocation composed of equal parts of the soap liniment and olive oil, and the left knee has been enveloped in flannel during the day. She is now decidedly better than on her admission, and is able to dispense with her crutches, and use only two sticks, and for walking short distances only one.

Remarks.—I have ventured to call this disease chronic rheumatic arthritis, because it appears more nearly to resemble that disease in its chief characteristics than any other. I do so, however, with some hesitation, because it differs in many respects from that affection as ordinarily seen and described by our best writers on the subject, and notably as regards the right hip, in the following particulars, viz.: the intermittent and peculiar character of the pain—the entire absence of suffering in the intervals of the paroxysms—their final cessation after they had occurred for three years—the gradual drawing up of the limb—and, lastly, the non-existence of those ostitic growths which are regarded as pathognomonic of the affection. On the other hand, in the shortening of the thigh—the fixation of the joint—the non-implication of the soft parts around the articulation, and the otherwise perfect health of the patient, it resembles the above-named disease. Possibly some may regard it as originally of nervous origin, and no doubt the early history of the disease points in that direction; but the undoubted joint disease, the bone shortening, and the absence of muscular rigidity, are against this hypothesis.

The joint symptoms in the left lower limb date back only to the accident, five weeks before the patient's admission, and bear

a closer resemblance to chronic rheumatic arthritis than to any other joint disease; but even in this limb, the symptoms, if we except the crepitus and pain on motion, differ in many respects from those usually attributed to the disease in question. It also deserves remark, that the thigh is already becoming flexed on the pelvis, and that long previous to the accident the patient had experienced a great want of strength in that limb, to which she attributes, in a great measure, her fall.

May it not be, then, that in this patient we have, coexisting, a joint and nerve disease, which have manifested themselves by a combination of symptoms which, so far as I know, has been hitherto undescribed?

XVIII.—*Case of Motor Asynergy.* By Edward Headlam Greenhow, M.D. *Read March* 22, 1868.

R. R., aged 51, ironmonger's porter,* has been under my care at the Middlesex Hospital since July 1865, for the most part as an out-patient, but on several occasions for short periods as an in-patient, and he is at the present time in Pepys's Ward. The case is in many respects a remarkable one, and I am induced to bring it before the Society as a case under observation, with a view to its being referred to a committee for investigation. I shall, therefore, only describe the main features of the case at the time of the patient coming under my care, leaving all details relative to his present condition to be supplied by the reporters.

Previous History.—From the age of 10 years to that of 30, the patient suffered from epileptic fits. Some time after he became free from these he had an attack of brain fever, brought on by drink and trouble, and at the age of 37 he was confined to bed for twelve weeks with an attack of rheumatic fever. Shortly after this he began to suffer from hæmorrhoids, for which he was at one time a patient in the Middlesex Hospital, and ultimately became an out-patient at St. Mark's Hospital, where he had undergone some operation a year or two before he came under my care. He had not had syphilis.

State on Admission.—Patient complained of weakness of the lower limbs, which he said had been coming on for

* This case appears as No. VII. in the paper on Locomotor Ataxy, in the first volume of 'St. George's Hospital Reports,' by Mr. Lockhart Clarke, who saw the patient once with me and took notes of the case with my permission.

several months, and he walked in an unsteady, tottering manner, more particularly on first setting out, or when he had occasion to change his direction or to turn round. He could not walk or stand in the dark, or with his eyes shut, without losing his balance, as he needed to fix his eyes on the ground, or on some object in front of him to guide his movements; neither could he stand without assistance with his feet placed close together; but he could walk or stand steadily when his eyes were open if he were held only by a single finger. His muscles were well developed, and his muscular force was not sensibly impaired. He could effectually resist all attempts to bend his leg, and the grasping power of his hands was quite normal. He could also, without inordinate fatigue, walk a distance of several miles, carrying a heavy bar of iron on his shoulder, and when once fairly started could walk more steadily under such a burden than without it. The sense of touch and the susceptibility to external sensations were impaired or perverted, but not everywhere, nor in the same degree in different parts of the body. Thus, he had numbness in the soles of the feet but exaggerated sensibility to tickling, which always produced jactitation in the lower limbs. His hands also felt numb, so that when desired to pick up a pin from the table he did it in a clumsy, fumbling manner, especially with the left hand, and sometimes he could not hold an object unless he looked at it. On some parts of his limbs a prick with a pin was keenly felt, whilst on others it was not felt at all at the moment, but was perceived after an interval of three or four minutes. He could not discriminate between hot and cold things when applied to his limbs, being only able to say that something had touched him. He was not sensible to the passage of his urine during micturition, which was at times performed with difficulty, whilst at others the call was so imperative that he could not resist it. His urine was sometimes passed in a full stream, but there was a constant tendency to dribbling, and both it and his fæces occasionally passed quite involuntarily, especially when he was obliged to stoop down to lift anything from the ground. On examination by Mr. Hulke, neither stricture of the urethra nor stone in the bladder was found.

A very peculiar feature of this case was the patient's extreme sensibility to the slightest unexpected touch, causing sudden involuntary startings of the limbs attended by a feeling of alarm. Thus, the friction of a woman's dress when passing in the street has often almost thrown him down;

and the accidental dropping of a diet card upon his bed, or the chance touch of a student's coat against the bed-clothes has made him start up in bed in a fright, or caused spasmodic retraction of his limbs. These involuntary startings were sometimes excited by contact even during sleep, but a stronger touch was then required to produce them, and it sometimes needed to be repeated several times. On the other hand, when he was awake, if he saw that he was about to be touched, these convulsive startings did not take place.

As is usual with patients of his class, he often suffered from pains in the lower limbs, which came on without warning, sometimes in rapid succession and of momentary duration, at other times with longer intervals between them and lasting each a few seconds. A frequent seat of these pains was the inside of one or other thigh, just above the point where the sartorius muscle crosses the adductor longus. They occurred also in the parts of the thigh immediately above the patella, in the calves, the heels, and the toes. According to the patient's description, the pains generally assumed a different character in each of these different seats. Above the patella they resembled the feeling of a succession of rapid blows; in the calves and round the heels they were like the biting of an animal; whilst in the toes the sensation was as if the nails were being forcibly dragged off. On many occasions, whilst standing at the table in the out-patient room, he has been seized with so severe a pain in one of the seats I have named, as to make him groan aloud, totter, and almost fall down. He had similar though less severe pains in the upper extremities, and also occasionally pain resembling clavus hystericus above the eye. The pains in the upper extremities were comparatively rare. They were seated usually in the ulnar border of the hands, having only on a few occasions spread up the ulnar border of the left arm as high as the elbow. Both hands were also partially numb. The numbness in the right hand was confined to the middle, fourth, and fifth fingers; in the left hand the thumb and index finger were likewise affected. The accession of all the pains I have described was manifestly influenced by meteorological changes, such as sudden alterations of temperature, or storms of wind, thunder, or rain.

His sight was perfect in each eye separately, but soon bebecame dim when he used both eyes together, in consequence of a discrepancy in their focal distance. The pupils were exceedingly small, and remained almost uninfluenced by belladonna administered in half-grain, and subsequently in

grain doses three times a day, but were dilated by solution of atropia dropped into them by Mr. Hulke, who has on several occasions examined them with the ophthalmoscope. Three years ago Mr. Hulke found that the retinal vessels were small and the optic discs pale, and he detected no further change at his last examination. At one time, not long after the patient came under observation, there was slight ptosis with inward strabismus of the left eye. His taste was impaired from the first—salt, for instance, causing only a sense of burning in the mouth, without imparting any definite flavour. He was also slightly deaf, particularly in the left ear, and was examined by Mr. Hinton in November 1865, who said that the membrana tympani of the left ear was dull and white, and more convex than natural, but that there was no sufficient indication for any decided opinion as to the nervous state.

Progress of the Case.—The patient has slowly but progressively become worse since his admission in July 1865, and is now, March 1868, in a very helpless condition, being unable to stand or walk without assistance. His mind, however, remains unimpaired, and, being an intelligent man, he is able to give a good account of his own state.

Treatment.—I have tried very various treatment in this case without any satisfactory results. The patient has appeared on several occasions to derive much temporary benefit from the nitrate of silver given in grain doses three times a day; but the good effect passed off whenever the remedy had to be discontinued. Strychnia, even in very small doses, has never failed to increase the tendency to spasmodic starting of the limbs, and galvanism has also appeared to aggravate rather than to relieve his symptoms.

Report on Dr. Greenhow's *Case of Motor Asynergy (Locomotor Ataxy). Read May* 22, 1868.

R. R., æt. 54.—Body muscular and well nourished; face dusky from nitrate of silver staining; slightly œdematous condition of right lower extremity below knee, though more marked on left side; exuberant growth and shedding of epidermis from soles of feet and toes, and to less extent from dorsum of feet and lower parts of legs. Mind clear, with more than ordinary intelligence, but memory decidedly impaired. No signs of heart or lung disease; pulse 88, regular. Appetite variable, tongue with slight white fur. Bowels moved very rarely—often after intervals of ten days,

and then motions generally loose, with unconscious evacuation. Urine now continually dribbles away, patient being unconscious of its passage. Urethra also insensible to passage of catheter by patient night and morning. When catheter is passed also, the bladder is seldom found to contain more than an ounce or two of urine, which is at present ammoniacal in odour, and light-coloured from admixture of pus.

Virile power completely lost; erections now never taking place, though about two years ago, for a period of four or five months, he was subject to frequent erections, and two or three times a week had nocturnal emissions after dreams. Temperature in axillæ 99⅓° F.

Cranial Nerves.—Sense of smell is much impaired; he is unable to distinguish the odours of flowers with which he was before familiar; is, however, constantly tormented with subjective odours of a most disagreeable nature, which often persist for some hours. Sense of taste also very defective; he cannot distinguish ordinary flavours, and many substances (such as tobacco), far from sweet in themselves, produce in him subjective sensations of sweetness. He could, however, perceive a distinct difference between sugar and salt when dropped on either side of the tongue, and was able, after careful tasting, to surmise their real nature. The sensibility of the face and also of the inside of the mouth seemed to be decidedly deadened, and the patient complained of not being able to feel naturally when these parts were touched. Sense of sight more slightly affected, vision only somewhat indistinct, and this appearing to depend in part upon the fact that the focal distance of the right eye is about four inches less than that of the left; though, irrespective of this, when the eyes were tested singly, the sight of the right seemed not so good as that of the left. No strabismus, no ptosis, but both pupils minutely contracted, and reacting very slightly and very sluggishly to light. Conjunctivæ not injected. Now no amblyopia or diplopia, though patient states that for some months in the year before last objects used to appear distinctly multiple to him—piled up on one another. When examined ophthalmoscopically by Mr. Hulke, the retinal arteries appeared small, and the optic discs were pale, but presented no other notable change. There is partial deafness of both ears, but more especially of the left. The loud ticking of a watch is only heard when the watch is brought into contact with the pinna, though such an amount

of deafness is more than one would have imagined to exist from conversation with him alone. No paralysis of muscles supplied by the facial nerve. Articulation quite distinct, and movements of the tongue perfect.

Pains in lower extremities, such as were described in the original report, now felt less than formerly, though the situations to which they may be referred are more numerous. Now they occur at intervals of days, or even of two or three weeks, the short successive pains often extending over a space of thirty-six, and never less than six, hours. The sensation of tight constricting band around abdomen, formerly complained of, is now no longer felt. He experiences some tenderness on pressure over spine, at level of about fifth or sixth dorsal vertebræ, and also at the top of the sacrum; and the application of a hot sponge was much more keenly appreciated in the former region than when it was applied to other parts of the spine.

General Sensibility.—The sensibility of the surface of the body is very widely affected, being more or less diminished almost everywhere save in the arms and forearms. But very great differences exist in the amount of diminution in different parts, the defect being by far the most marked in the feet and lower extremities, whilst it becomes only slightly obvious in the higher parts of the trunk and in the face. The diminution also extends in an unequal degree to the various modes of sensibility: thus, the sensibility to pain seems almost completely abolished, the sensibility to differences of temperature is impaired almost as much, and electro-sensibility is also notably diminished, whilst the pure tactile sensibility, though weakened to a less extent than the other modes, is notably blunted; sensations of mere contact, if perceived, being only appreciated slowly, and imperfectly referred to places touched. And, speaking generally, it is found that impressions of touch are more rapidly and correctly appreciated as the area of contact is increased in extent. In exemplification of these changes, we will only mention the following facts. Over most parts of the lower extremities the deep prick of a needle is felt only as a dull, imperfectly located touch. A hot sponge applied to the dorsum of each foot produced no sensation of heat, but a vague, somewhat painful impression, which is referred rather to the neighbourhood of the knee than the foot; whilst the same hot sponge, applied to various parts of the calves and thighs, produces only impressions of mere contact. The application of a cold sponge to various parts of the lower

extremities is also only appreciated as mere contact, though it generally produces reflex action either of the entire limb, or only of the muscle over which the cold is applied. A light touch with the tip of the finger is not felt at all over various parts of the lower extremities, but a heavier touch is felt—sometimes at once, and sometimes after an interval of from one to three seconds. Formerly, a painful impression was said to have been perceived in about four minutes after the deep prick with a needle of portions of the lower extremities, though now no pain seems to be perceived even after this long interval, but only a sense of mere contact after one or more seconds. In passing upwards to the trunk the same impairment of the different modes of sensibility is found, but to a less extent than in the lower extremities. Here also the inability to recognise differences of temperature and the analgesia are more marked than the anæsthesia. The amount of impairment frequently differs in corresponding parts of the two sides of the body; thus, the sensibility is diminished less in the right than in the left hypochondriac region, and there are like differences in the two mammary regions. The amount of diminution becomes less in the higher parts of the trunk, and over the neck differences of temperature can be discriminated, although the sensibility of the surface is obviously blunted. He cannot appreciate the nature of the surface on which he is lying, and though on a mattress he seems to be reposing on a soft elastic substance, and experiences no sense of weight or pressure. The sensibility of the upper extremities seems unaffected, save in the two hands, and of these the parts most implicated are the tips and the palmar surfaces of the fingers. In the forefinger and thumb of the right hand, however, the sensibility of these parts is unimpaired, though in the other thumb and all the other fingers there is so much numbness that, when objects are brought into contact with them, it appears to the patient that he is touching them through a 'thick glove.' In the palms of the hands the sensibility is scarcely at all impaired, and on the dorsal aspect of the fingers it is only so to a slight extent. A pin can only be taken up from a flat surface, with the greatest difficulty, by the forefinger and thumb of the left hand, and when taken up, it cannot be put down again, except after several vain attempts, owing to the irregular spasmodic contraction of the flexor muscles of the fingers. By the forefinger and thumb of the right hand the same pin could be at once taken up and replaced at pleasure.

Deep Sensibility.—When lying in bed he has no notion as to the position of his feet and legs below the knee. In order to ascertain their position, he has either to feel for them with his hands, or to rub them against one another. In standing, also, he neither feels the ground nor his feet, but seems to be, as it were, suspended in air. This deep muscular and articular anæsthesia is limited to these parts.

Electro and Reflex Motility.—Tested by the induced current, it is found that the electro-motility of the muscles of the lower extremities was almost entirely abolished, and the same was the case with the muscles of the left thumb though those of the right reacted in the usual manner.

The reflex excitability of the lower extremities was most notably increased, so that slight touches, or even strong currents of air produced by a person moving rapidly past his bed, produce a more or less general convulsive condition of the whole body, accompanied by a distressing but indescribable sensation. A small bed-card having been thrown down unexpectedly on one of his legs, we saw one of these general convulsive conditions immediately produced, which lasted more than a minute, and towards the close it was noticed distinctly that the muscles of the lower extremity were in a state of powerful tonic spasm. This reflex excitability was most marked after light touches rather than heavy ones, and after impressions on the legs rather than the thighs, and in all cases only when the touches were unexpected by the patient. But there is one patch of skin, about 2½ inches square, on the outer side of the right leg (in territory of cutaneous branches of external popliteal nerve), impressions upon which so readily produce reflex actions that he cannot always restrain these, even though he knows the part is about to be touched, and does what he can to check the reflex movements by fixing his eyes upon the part. This area has been for about two years in this condition of extreme sensitivity to impressions capable of exciting reflex movements, and the patient says he has frequently been thrown into convulsions, and has dropped down in the street from the mere brushing of a woman's dress against this part. Even when he touches this spot himself, either with his hand or by his trowsers whilst dressing, slighter convulsive movements often take place. At these times he feels an 'odd' kind of sensation in the part, which thence rapidly diffuses itself throughout the body.

Muscular Power.—On testing the muscular power of the

lower extremities, whilst patient lies in bed, this is found to be very great, and seemingly unimpaired. It was found impossible to flex his leg on his thigh by the greatest effort when he opposed the flexion; and with the legs lying flat on bed, flexion of the foot could only be prevented with the greatest difficulty by pressure of the hand against its dorsum.

These muscular efforts caused the patient no pain or distress of any kind. He is notably weaker in the left hand and arm than in the right, and indeed the patient says that this weakness extends to the whole of the left side of the body, although the difference is not so marked in other parts.

Power of executing combined Muscular Movements.—Whilst lying on his back, having raised one of his legs from the bed, he finds it impossible to flex it, or even to keep it steady—the limb is darted about in all directions. He can execute all voluntary combined movements of his upper extremities, though he is unable to perform such an operation as buttoning his trowsers, except with difficulty, on account of the great numbness of his fingers. After requesting him to dress in part, in order that we might see how he could walk in the ward, it was observed that he was unable to put on his stockings and trowsers without assistance, and that whilst sitting on the edge of the bed, he frequently tottered over in one direction or another. He stated, moreover, that he had only been able to walk again for the last two weeks. For some time previous to this there had been such a 'rolling tendency' that he had been unable either to sit or stand. On his commencing to walk, it was seen that he used a stick with his right hand, and with his left leaned lightly upon an assistant. He was unable to move a step without looking intently at his feet, and whilst walking the left leg was flung forwards in a jerking manner, whilst the heel was brought down with a stamp, but there were no lateral deviations or other irregular movements of the leg. The right leg was moved forwards with notably less jerking, and the heel was brought to the ground almost without a stamp. He was unable to turn round sharply, but was obliged to make a considerable curve before reversing his direction. If the feet were placed together and the eyes were then shut, even though he were standing with his stick in one hand whilst he rested slightly on an assistant with the other, he at once tottered and would have fallen to the ground, had he not been prevented. As before stated, when standing he is quite unable to feel his feet on the ground, though when he walks,

and the heel comes to the ground with a stamp, he feels the jar thereby produced in the lower extremity.

Comments.—In many respects this is one of the most important cases of locomotor ataxy (motor asynergy) yet on record. It is remarkable for the extent to which the sensory cranial nerves or nerve-centres are implicated, whilst the functions of the motor cranial nerves are unimpaired. The affection of the sense of smell and of the sense of taste are especially rare in this disease. In the spinal cord also the extent of the morbid process is much greater than usual; instead of being confined, as it often is, to the lumbar region of the cord, in the present case the dorsal and cervical regions also are unmistakably implicated, and throughout apparently to a somewhat greater extent on the left than the right posterior region of the cord. The actual amount of inco-ordination of movement of the lower extremities is, however, much less than is often met with. The extreme reflex excitability of the lower extremities is most remarkable, and very rare; it exists to such an extent as strongly to remind one of the extreme reflex excitability of hydrophobia. From the fact that in this case the anæsthesia was less marked than the analgesia and loss of sensibility to differences of temperature, it differs also from most of the cases of locomotor ataxy hitherto recorded. We may note, too, that it is rare to see the bladder paralysed to the extent observed in this case.

The occurrence in early life of epileptic fits, and afterwards at the age of 30, or thereabouts, of so-called brain fever, are probably to be regarded more as coincidences than as in any way causatory of his present disease. As in so many other cases of locomotor ataxy, nothing definite can be said concerning the ætiology of the disease, and still less concerning its therapeutics. In the present case none of the various drugs administered has seemed to have had much influence in retarding or altering the progress of the case.

As regards recovery, our prognosis is hopeless, though life may last for some time, and slight alternations may take place. Judging, however, from the tolerably rapid progress of the case, we should fear that the morbid processes may after a time invade the medulla oblongata, and perhaps produce death by implication of the pneumogastric centres, should the patient not previously have been carried off by some intercurrent disease.

Signed, H. C. Bastian.
T. Buzzard.

XIX.—*Cases of Chronic Ascites in Children.* By THOMAS HILLIER, M.D. *Read March* 27, 1868.

ALFRED S. came under my care, in the Hospital for Sick Children, in November 1866. He was then two years and a half old. His father and mother were living and apparently healthy. He was the fourth child of his mother. The first-born was a seven-months' child, and died a month after birth; the second lived three months only, and the third five months. Neither of these children had any eruption on their skin, nor did they snuffle. The causes of their deaths are not known. One child, born since Alfred, is now six months old, and appears healthy. There is no history of phthisis or syphilis either on the father or mother's side; although the premature deaths of their first three children suggest the possibility of syphilis.

Alfred seemed perfectly well till six weeks before he was brought to the hospital. He had walked at the age of fourteen months, and not suffered from any of the diseases of infancy. His bowels had been sometimes loose, but never severely; he was never jaundiced.

Six weeks before I saw him his abdomen was noticed to begin swelling, and had continued to do so rapidly; he had had no pain. The bowels were rather confined at first; latterly they had been inclined to be loose. He had several times vomited within the six weeks. There had been nothing noted specially abnormal in the appearance of his stools.

State on Admission.—The boy is thin, but not emaciated; pale, with some healthy colour left in cheeks. The lips, cheeks, and extremities are inclined to lividity. The skin is cool and natural.

Lymphatic glands of front of neck somewhat enlarged; those of posterior cervical regions, axillæ, and groins are normal.

Pulse 136, very weak. Heart's apex-beat not perceptible; sounds weak, without murmur.

Lungs quite normal; the upper border of liver reaches to the fourth rib.

Tongue clean.

Abdomen greatly enlarged. Shape globular; greatest prominence just above the navel, which is itself slightly protruded. Superficial veins slightly enlarged. There is perfect fluctuation in all directions, from loins to the front and from side to side.

The circumference of abdomen midway between xiphoid

cartilage and umbilicus is $25\frac{1}{8}$ inches; the distance from the end of xiphoid to umbilicus is $5\frac{1}{2}$ inches, from umbilicus to pubes $3\frac{1}{2}$ inches.

Percussion-resonance is everywhere deficient except above the level of navel and to left of middle line, where the resonance is amphoric. Palpation detects no solid mass of any kind. The liver cannot be distinctly felt, and the spleen does not seem to be enlarged.

There is some subcutaneous œdema at the lower part of the back, and a very little near the ankles. The eyelids are not at all puffy.

The urine is rather scanty, varying from 8 to 10 ounces in twenty-four hours; specific gravity about 1020, yellow in tint, sometimes presenting a slight sediment of muco-epithelium without a trace of albumen.

Five days later (on November 14) the largest measurement of abdomen was $24\frac{3}{4}$ inches. The lower edge of the liver could be felt by suddenly displacing the fluid in front of it with the hand; as far as can be ascertained it is quite smooth on the surface, and it reaches about the breadth of two fingers below the false ribs. The spleen cannot be felt.

He remained in the hospital with his abdomen much in the same state, but was stronger and better in general health, until December 29, when he showed signs of hooping cough. He was then made an out-patient. He passed through this illness easily, and during the height of it his abdomen was much reduced in size.

On March 29 he was again admitted. During the previous month the ascites had been decidedly increasing. The abdomen now measured $26\frac{1}{2}$ inches. The heart's apex was felt in the fourth left interspace; the liver and spleen could not be made out. He was decidedly somewhat livid. I ordered gr. $\frac{1}{24}$ of bichloride of mercury, gr. ss. of disulphate of quinine in water three times a day.

After a fortnight his bowels were much purged, he had pain, and passed a little blood with his stools. The medicine was now omitted.

He was then left without medicine; the abdomen became less tense; it measured $25\frac{5}{8}$ in. The liver could be felt. His bowels were regular and his appetite good.

He was discharged on May 8 in this condition.

On November 12, 1867, he was again admitted in much the same state, but suffering from a cough arising from catarrh of the bronchi. The abdomen now measured $28\frac{6}{8}$

inches. There was a slightly jaundiced tint in the conjunctivæ. His appetite was good. Bowels were acting three times in twenty-four hours; motions of a light yellow colour. His urine was free from albumen, and loaded with lithates.

He was ordered four grains of nitrate of potash in an ipecacuanha mixture.

On November 26 the abdomen only measured 26 inches; his cough was better.

He was now attacked with scarlatina, which he passed through easily. It was not followed by albuminuria or anasarca.

On December 16, just after the fever, the abdomen measured only 25 inches, was quite flaccid, and contained much less fluid. The lower edge of the liver gave an impression of being harder than natural.

He took food well and had a good colour in his cheeks.

I had hoped to see him again, but on writing to his old address I found that his parents had removed to another residence, and the neighbours could not say where.

The next case presents many points of similarity with the preceding. Here there was great ascites without obvious cause, appearing rather suddenly and remaining as a chronic condition. The patient was older when the symptoms commenced.

William C., aged 5½ years, admitted into the Hospital for Sick Children on February 20, 1868. He is the eldest of four children, one of whom died of measles. His father and mother are living. His father's brother and father died of phthisis. No other hereditary predisposition to disease can be traced in the family.

William enjoyed good health until last May (ten months ago), when he had a feverish attack, with sore throat, which lasted three weeks. After this illness, the exact nature of which cannot be ascertained, his abdomen began to swell; it was not tender; he did not vomit, nor was his skin at all jaundiced. During the summer he passed but little water, which was high-coloured and turbid when cool. His mother thinks the bowels were relaxed at this time, but she is not sure, as she was ill and not able to give him much attention. Since last summer his abdomen had gradually increased in size, and has lately much interfered with his breathing.

On admission the following notes of his condition were taken:—

He is thin but not emaciated. The general tint of his skin

is rather a purplish-yellow; his lips and cheeks are of a dusky red colour; his eyeballs rather prominent. The veins of neck are distended and sometimes visibly pulsate with each beat of the heart. He does not complain of any pain, but has evidently to labour for breath. His pulse is very weak and cannot be counted at the wrist. Heart's pulsations 120 in the minute; the position of the apex-beat cannot be exactly determined. It does not seem to be much raised. Respiration 60 in the minute. His tongue is clean, appetite moderately good, and bowels regular. His abdomen is enormously enlarged, measuring when he sits 28¼ inches just above the umbilicus; when lying it measures at the same part 26¾ inches. The umbilicus is slightly prominent, and the superficial veins injected. The abdomen is symmetrical; there is free fluctuation in every direction and no resistance to pressure. There is dulness on percussion, except over the stomach and ascending colon. When he is placed on his right side the lower edge of the liver can be felt about three fingers' breadth below the false ribs. Hepatic dulness extends in the vertical line of nipple from the fourth rib for seven inches downwards. The right lung, however, comes down in front over the liver as low as the sixth rib. Behind, the right side of chest is more or less dull below the angle of scapula. No enlargement of the spleen can be made out. There is nothing abnormal in the pulmonary or cardiac sounds on auscultation. His urine is scanty, measuring from ten to twelve ounces in the twenty-four hours. It is sometimes high-coloured, at others pale, but always loaded with lithates and free from albumen. Its specific gravity is 1030. On one occasion he had retention of urine and a catheter was used.

He was ordered an occasional dose of castor-oil and a mixture containing five grains of nitre, eight grains of acetate of potash, and half an ounce of decoction of broom, to be taken three times a day.

He was in much the same state on the 23rd instant. There was a little less distension of the abdomen and his lips were perhaps not quite so dark in colour.

A medium-sized trocar was introduced an inch and a half below the navel in the middle line, and 1820 cubic centimètres (about 64 ounces) of fluid were drawn off. It was of a lemon colour, faintly alkaline reaction, and 1018 specific gravity. It had a glutinous consistence, forming very persistent bubbles, and became solid on boiling, but it gave no precipitate on the addition of acetic acid. The fluid was sent to Dr. Marcet,

who has kindly undertaken to analyse it more carefully. There were seen floating in the fluid a few flakes, which were found under the microscope to consist of granular exudation cells without nuclei, larger than white corpuscles or ordinary pus cells, cells like squamous epithelium, blood discs, and free molecular matter.

After the operation the boy's colour was improved, the veins of his neck were less distended, the abdomen was flaccid, and the liver could be felt very distinctly. It was obviously enlarged, rather hard, and smooth on the surface. He had a very comfortable night, and during the next twenty-four hours he passed fifteen ounces of urine.

March 26.—He was in much the same condition; the abdomen was, however, becoming fuller and the veins of the neck pulsate as before. The colour of his face and lips is better, and the lower posterior part of his right lung expands more fully.

The operation was not resorted to with the expectation of doing him much permanent good; but it was considered that it would relieve his dyspnœa and perhaps promote the secretion of urine without doing any harm.

Remarks.—What is the nature of the disease in these two cases? We have in both dropsy limited to the peritoneal cavity. There seems to be little disturbance of health beyond what must necessarily result from pressure, by interference with respiration, circulation, and digestion, and by the loss of so much nutritious fluid from the system. There is no reason to suspect tubercular or cancerous disease; nor do I think the effusion can be the result of peritonitis; the absence of pain and tenderness seems to be inconsistent with this hypothesis. We may also exclude cardiac and renal disease from the list of probable causes. There is no known general condition of the system to explain the symptoms. We are brought by exclusion to the supposition that the dropsy is due to obstruction of some kind. What is the seat and nature of the obstruction? It has been lately shown that there are numerous free communications between the lymphatic system and the peritoneal cavity sufficiently open to allow of the passage of solid particles from the vessels to the peritoneum. Dr. Habershon mentions two cases of ascites in which the fluid had a milky appearance: in one case there was obstruction of the thoracic duct, and in the other there was apparent obstruction through the lymphatic glands and the lymphatic vessels were much distended. He does not actually state,

but he implies, that there was no other discoverable cause of the dropsy.

In the cases just reported there is no reason to suspect the existence of lymphatic obstruction. In the second case, in which the fluid has been examined, it does not present a milky appearance. The obstruction is no doubt in the venous system. In an adult we should say it was probably in the vena portæ, and due to cirrhosis of the liver. We are not inclined to assume that this is the explanation of these cases. Cirrhosis is rare in young children. The sudden accession of the dropsy without previous hepatic disorder, its subsequent chronic and, in the first case, almost stationary, character, and the absence of cachexia, are unlike what is seen in ordinary adult cirrhosis. There may be an obstruction in the main trunk of the vena portæ, in the tranverse fissure, or in the large hepatic veins near the entrance to the vena cava. Thrombosis in these veins, or narrowing of them from plastic effusion by extension from the capsule of the liver, or the presence of a tumor, are conceivable causes of obstruction. The explanation, however, must remain entirely obscure until an opportunity has been afforded of studying their anatomy.

Whilst the nature of the disease is so doubtful, the treatment must also be unsatisfactory.

Diuretics seem powerless; we cannot expect much benefit from diaphoretics, and drastic purgatives would be inadmissible. The only treatment that at present appears to me to be indicated is to nourish the patients well, occasionally to give them a bitter tonic with a mild chalybeate, and to regulate the bowels with an occasional aperient. I would also support the abdominal muscles by means of a flannel belt.

Sequel to the cases of Ascites. By THOMAS HILLIER, M.D. *Read May* 22, 1868.

Abstract.—The second patient, William C., after taking three doses of extract of belladonna became feverish, his renal secretion was much diminished, and rapid effusion occurred into the right pleura. The thorax was tapped and 25 ounces of serum withdrawn. He died the next day; exactly four weeks after the last report.

Autopsy.—Double pleurisy with tuberculous exudation on the pleura. Old pericardial adhesions; cirrhosis of liver

and old peritoneal adhesions; cretified tubercle of the bronchial glands.

William C. continued in much the same condition from March 27 until April 12; his abdomen, however, became more distended than it had been immediately after the operation. He passed not more than eleven ounces of urine in the twenty-four hours. He was ordered, on July 13, one-third of a grain of extract of belladonna three times a day, on the strength of Dr. John Harley's experiments, which went to show that belladonna is a good diuretic. After taking three doses of this drug he became drowsy; there was said by the nurse to be a red rash over his chest and back; he had no sickness, sore throat, or thirst. His pulse was weak, 140 in the minute; respirations 44; he had a slight cough with some mucous râles in chest. The belladonna now discontinued. During the following night he moaned a good deal; his face was more livid; he lay over on his right side; he passed only half an ounce of urine in twelve hours. The catheter was passed in the morning of April 15, and four ounces of urine were drawn off free from albumen.

April 16.—He is still very restless; complains of pain near the right hypochondrium. The veins of his neck are full and pulsating. He has only passed an ounce and a half of urine in twenty-four hours. He is now to take the following mixture every four hours: ℞ Potassæ nitratis gr. iv., potassæ bicarbonatis gr. iv., tincturæ scillæ ʒ iv., syrupi aurantii ʒ ss., infusi calumbæ ad ℥ss. His temperature in the evening was 101° F.

17.—Another restless night; he has a constant cough. The right side of his chest is now dull on percussion downwards from the spine of the scapula behind and the nipple in front. Under the right clavicle the percussion note is rather amphoric in character. The respiratory sounds are very weak and blowing in character below the scapula, behind and below the third rib in front. On the left side of his chest the physical signs are normal. There is no displacement of the heart. His pulse is very weak, not readily counted. The heart's pulsations are ascertained to be 176 in the minute. He passes about eight ounces of urine in twenty-four hours. There was now added to each dose of his mixture a grain and a half of ammonia.

18.—He is in great distress; perspires very freely, and is very purple. The pleuritic effusion has somewhat increased. To relieve his dyspnœa his abdomen was again

tapped, and 26 ounces of fluid were drawn off. This fluid appeared to have the same physical characters as that drawn at the first tapping. It became partially coagulated from the admixture with it of a few drops of blood.

Is now to take: Potassii iodidi gr. j., syrupi zinzib. ʒ ss., potassæ acetatis gr. v., tinct. juniperi co. ʒ ss., aquæ ℥ ss., 4tis horis.

The pleuritic effusion went on to increase. The percussion-note was dull over the whole of the right lung, back and front; even close to the spine and under the clavicle. Respiratory sounds were weak and bronchial under clavicle, becoming lost below the nipple and angle of the scapula. The heart was scarcely at all displaced. There was slight friction heard over the right lung near its base.

On the 19th he complained of nausea; he once retched and brought up mucus tinged with blood. His bowels were very loose.

22.—He had slept badly, wandered a good deal, was occasionally faint, and had cold sweats.

23.—Has passed another very restless night. He is this morning pale and livid; the tint of his skin generally is blue, his hands are cold; he complains of heat though his surface is cold and moist.

To relieve his great restlessness from dyspnœa, it was determined to tap the right pleura, which was done in the sixth interspace, a little outside the nipple. Twenty-five ounces of fluid were drawn off, specific gravity 1018, completely coagulated by heat. The fluid was rather darker in colour than that drawn from the peritoneal cavity. He did not rally well after the operation, and died at two A.M. of April 24.

Autopsy.—On opening the abdomen there were some firm long adhesions extending from the right lobe of the liver to the diaphragm. About 20 ounces of fluid in peritoneal cavity. The liver weighed 34 oz. It is unusually rounded in form; the left lobe is obviously contracted in all its dimensions. The length of liver is 7½ inches, its height 6½ inches, and thickness 3 inches. The surface is mottled of dark purple and pale yellow colours; the purple is central and surrounded by a pale margin. Its consistence is decidedly firmer than natural. On section, some parts were very light and others very dark, presenting a resemblance to sliced nutmeg. The individual lobules of the right lobe appear rather coarse and large. The left lobe is

much tougher than the right; the lobules are finer and smaller. The lobulus Spigelii is very prominent and almost cubical in shape. Portions of liver reserved for microscopical examination by Dr. Sanderson.

The spleen was firmer than natural; weight $2\frac{3}{4}$ ounces. There was no appearance of albuminoid change in liver or spleen.

There was no sign of tubercle in the liver or spleen, but on the convex surface of the liver was an opaque white spot, of the size of a small pin's head, seated apparently in the thickened peritoneal covering exclusively.

The heart was found to be universally bound to the pericardium by old adhesions, which near the apex and the front of the left ventricle were very thick, and of almost cartilaginous consistence. The valves of the heart seemed healthy. It weighed, with a little pericardium which could not be removed, 5 ounces. The cellular tissue of the anterior mediastinum was very œdematous.

The right pleura contained nine ounces of dark yellow fluid and some recent adhesions. The left pleura contained two ounces of fluid, and recent adhesions near the anterior surface and the base. At the root of the right lung was cretified tubercle in the bronchial glands.*

On the left lung, between the lobes, were a large number of small shotty nodules, seated apparently in the pleura, and a number of bright spots, consisting of small vividly-injected vessels with minute extravasations. Some of the nodules were surrounded by a vascular halo, some were opaque, but the majority were semitransparent. On the parietal pleura of this side were numerous shotty exudations similar to those on the pulmonary pleura. Some of these nodules were taken by Dr. Sanderson for microscopical examination.

The left lung was universally covered with very dense adhesions which could, with care, be peeled off. The pulmonary substance was in a state of carnification. Its weight was $9\frac{1}{4}$ ounces.

The left lung contained a cretified gland in its lower lobe about the size of a horse-bean. The lower part of the upper lobe was more solid than normal, but did not break down under the finger, nor did it sink in water. There was no tubercle in the parenchyma of either lung.

* Whether the belladonna which he took had any share in arresting the renal secretion and setting up the pleurisy I am not prepared to say; the occurrence of the symptoms immediately after taking this drug is certainly worthy of note.

Kidneys very firm in texture, the bases of pyramids much injected. Structure to naked eye not altered.

Intestines rather injected in many parts, nowhere ulcerated.

Brain.—Pacchionian bodies large. Cerebral substance of normal consistence, and not extra-vascular. No thickening of membranes at base or trace of tubercular granulations.

Microscopical Examination by Dr. Hillier *and* Dr. Sanderson.

The thickened and somewhat indurated pleura covering the opposed surfaces of the upper and lower lobes of the right lung, which was sewn with numerous hard semitransparent nodules, none of which were larger than pin-heads, was examined after hardening in chromic acid. The general thickening is found to consist partly of wavy fibrous bands of connective tissue, partly of nests of spheroidal or oval connective-tissue corpuscles, occupying interstices between the bands of fibres. This tissue is very freely supplied with bloodvessels, and in vertical sections it is seen that each divided vessel is surrounded by a sheath of fibrous tissue more condensed than the rest. The semitransparent nodules are entirely enclosed in the thickened pleura; they consist of nuclear corpuscles, which cannot be distinguished from those which form tubercular granulations. In sections of the liver, made after previous hardening of the organ in chromic acid, it was seen that in all parts of the organ the portal canals were surrounded by sheaths of adventitious connective tissue of considerable thickness, consisting partly of fibres, partly of nuclear corpuscles. In the least diseased parts, the acini appeared to be unaltered, but in the left lobe, which was much more contracted and indurated than the right, the glandular structures were much atrophied—so much so that in several sections it appeared as if the parenchyma of the organ was replaced by a network of bloodvessels, enclosed in sheaths of connective stroma, among which a few groups of liver cells could be observed. The liver cells themselves exhibited no marked peculiarity. None of them were fattily degenerated. The liquid occupying the peritoneal cavity was examined on two occasions during life. It was found to contain numerous corpuscles, which were about $\frac{1}{1500}$ of an inch in diameter. These corpuscles differed

from the colourless corpuscles of the blood only in their being so much larger, while, on the other hand, they closely resembled in this and every other respect the corpuscles observed in the blood of patients affected with leukæmia. They differed from pus-corpuscles in the absence of the usual reaction with dilute acetic acid, as well as in their greater diameter.

Report on the Chemical Examination of the Liquid contained in the Peritonæum in DR. HILLIER'S *case of Ascites. Read May* 22, 1868.

The fluid was quite clear, and contained no fibrin; it exhibited a dark yellow colour, and evolved no smell. Its reaction was sharply alkaline; specific gravity 1022.

According to Dr. A. Schmidt, serous secretions frequently contain a substance he has called fibrinogen, which coagulates into a fibrinous clot when blood-corpuscles are added to the fluid; three experiments were undertaken to test the presence or absence of this material in the serous effusion under our consideration.

In the first experiment, one or two drops expressed from the coagulum which had formed in sheep's blood were added to a small quantity of the peritonæal effusion in a watch-glass; after 81 minutes no fibrin had apparently formed, but 54 minutes later the fluid was observed to contain a distinct clot, involving the blood-corpuscles which had been added; this clot was quite firm, and could be raised out of the fluid with the point of a knife.

In the second experiment, the addition of blood-corpuscles to 50 cubic centimètres of the effusion was productive of a fibrinous clot in 29 minutes.

In the third experiment, with 50 cubic centimètres of fluid, the clot appeared after 25 minutes.

The composition of the serous effusion was found to be as follows: I have subjoined, for the purpose of comparison, an analysis of blood-serum from Lehmann's book on Physiological Chemistry; one of serous fluid from the pleura by C. Schmidt, from Watts's recently published Dictionary of Chemistry; and another of a milky peritonæal fluid I analysed for Dr. Wilks, and communicated to the Pathological Society.

	Ascites fluid from Dr. Hillier's patient		Quantities calculated in grains, for 1 lb. of the Ascites fluid	Blood-Serum		Fluid from the Pleura analysed by C. Schmidt	Milky fluid from Peritonæum
Specific gravity .	1022		—	—		—	1012·5
Water . . .	936·5		6555·5	902·9		936	947·73
Solid Constituents .	63·5		444·5	97·1		64	52·27
Albumen . .	56·05		392·35	78·84		53·4	17·26
Phosphoric Acid .	0·09	7·31	0·67	0·41	8·51	Salts 7·4	3·95
Chlorine . .	3·91		27·37(Na. Cl. 45·2)	3·64			
Potassium . .	0·10		0·7	0·32			
Sodium . .	3·21		22·47	3·34			

It will be at once obvious that the fluid from Dr. Hillier's patient is similar in composition to that from a simple inflammation of a serous membrane. It cannot be considered as blood-serum, as it contains less albumen, and much less potassium and phosphoric acid. It is obviously not chyle, exhibiting no milky appearance, and containing much more albumen. It also contains more albumen than lymph, but it is difficult to establish any analogy or difference between these two fluids from chemical analysis alone. From the composition of the peritonæal fluid under our consideration being similar to that resulting from inflammation of the pleura, I am inclined to believe that it was due rather to inflammation of the peritonæum than to any obstruction of the circulation at the liver.

The fluid was found to contain sugar, which was clearly ascertained by the copper and fermentation tests; there was also in it a very small quantity of urea, but I could not detect the presence of bile acids.

Before concluding, I think it worth noticing that the serous peritonæal fluid which forms the subject of the present inquiry contains but very small proportions, or 0·67 grain of phosphoric acid, and 0·7 grain of potassium, in one pound or 7,000 grains of the fluid, while there are 392 grains of albumen and 45 grains of chloride of sodium.

For 392 grains of albumen, juice of flesh would yield about 39 grains of phosphoric acid, and 51 grains of potash. A fluid derived from the bodies of nematode entozoa, and obviously used by them for nutritive purposes, which was sent to me for examination by Dr. Cobbold, yielded on analysis a large proportion of phosphoric acid and potash. This,

and other reasons I need not enter into at present, show incidentally the importance of phosphoric acid and potassium or potash as constituents of nutritive fluids. The small proportion of phosphoric acid and potassium in the peritonæal fluid of the patient under our consideration may account for the fact of his nutrition being apparently but little interfered with. Still it is remarkable that the loss of so much albumen and chloride of sodium should not have been productive of a greater disturbance in the nutrition of the patient's tissues.

I must acknowledge the valuable aid of Mr. M. J. Salter, of the Royal College of Chemistry, who carried out carefully, under my directions, most of the manipulations in the present inquiry.

(Signed) WILLIAM MARCET.

Report on DR. HILLIER'S *Case of Ascites. Read May* 22, 1868.

The case which has been brought under the notice of the Society by Dr. Hillier is one of considerable complication, a large number of organs—viz. the lymphatic glands, the pericardium, the peritonæum, the pleura and connective tissue of the liver—being involved.

In the order of pathological development it appears to us that the disease of the bronchial lymphatic glands, which, it will be remembered, had undergone complete caseous degeneration, stands first. At what period the pericarditis occurred it is impossible to say. The anatomical facts show that it must have occurred at a very early period; it was probably immediately consecutive to the glandular lesion, if indeed it did not occur at the same time. The history of the patient affords no aid in solving this question.

The hepatic lesion, which probably stands next in the order of time, must be regarded as immediately connected with the peritonitis of which the ascites was the expression. Last of all comes the pleurisy, with respect to which it is to be noted that although the morbid appearances seem to be of different dates they are all much more recent than the pericarditis.

With reference to the nature of the lesions, we think that all the pathological results are due to the same process—i.e., to a process which the older pathologists would call chronic inflammation, while in the language of the present day it would be described as consisting in the growth of round or

oval connective-tissue corpuscles, and of new fibrous tissue in the affected organs.

In all the affected parts, the natural connective tissue is the seat of alteration. Thus we find the morbid process localising itself in the serous cavities in the sheaths of the bloodvessels, in the liver in the sheaths of the portal canals; while in the lymphatic glands the whole parenchyma undergoes hyperplasia and subsequent degeneration.

In the present imperfect state of our knowledge of the pathological relations of these tissues, we cannot venture to speak decidedly as to the way in which the morbid appearances observed in this case depend on each other. There is, however, one consideration which cannot fail to have an important bearing on the subject. Recent discoveries teach us that the sheathing tissue of the subserous vascular network of the peritonæum and pleura, and the sheathing tissue of the biliary canals of the liver are so intimately connected (and in fact continuous) with the lymphatic system of vessels, that they may be regarded as forming one and the same structure, and as endowed with the same functions. Our anatomical and physiological knowledge of this relation is as yet too scanty and too new to be applied to pathology, but it is not difficult to foresee its importance. For there are many riddles in pathology, which we may reasonably hope to be able to solve as soon as the great gap in physiology which is due to our ignorance of the structure and functions of the lymphatic systems is filled up.

(Signed) J. B. SANDERSON.

XX.—*Case illustrating the condition of the Femoral Artery after Acupressure for three days.* By HENRY LEE. *Read March* 27, 1868.

THOMAS FROMER, æt. 35, was admitted into St. George's Hospital, under my care, on December 18, 1867. He had broken his leg by a fall of some fifteen feet eleven days previously. When admitted the limb was tightly bandaged, and the foot cold. The skin in different parts was discoloured, and some large vesications appeared on its surface. The day following some patches of slough showed themselves on the surface. The sloughing extended slowly, and exten-

sive suppuration occurred around the broken extremities of the bones.

The thigh was amputated at its lower part, in the way recommended by the late Mr. Teale, on December 28.

The tissues in the neighbourhood of the fractured extremities of the bones were all infiltrated with pus. The cancellous structure of the head of the tibia was dark coloured, and could be broken down with very slight pressure. Acupressure needles alone were used to command the hæmorrhage after the operation; a vessel bled in the centre of the great sciatic nerve; a needle was placed below the nerve, and a loop of wire, not tightly, over it. The femoral artery was commanded in the same way. A large discharge of bloody serum occurred each day after the operation. The needle under the femoral artery was allowed to remain until the fourth day on account of the debility of the patient, and the absence of any indications that union of the wound was taking place. On January 2 he complained of pain on the sides of his upper jaw. The next day his jaw was fixed, the head was thrown back, and the muscles of the whole of the body were more or less rigid. He died the same night.

It is a curious fact that of the patients who were at that time under my care in St. George's Hospital, three were attacked with tetanus: one of these had a wound through the temporal muscle exposing the bone beneath; a second occurred in a boy who was severely burnt about the legs and stomach; and the third was the case which I have related. A few days afterwards a fourth rapidly fatal case occurred under the care of Mr. Holmes. The cause of the tetanus in these cases I may perhaps have another opportunity of considering; but as the time is limited, I would now beg the attention of the Society to the condition of the femoral artery after it had been subjected to acupressure for three days. It may be seen filled with a firm closely adhering clot. The lining membrane is red near its cut extremity, where it was subject to pressure, but it presents no sign whatever of any effusion of lymph upon its surface.

I note this fact particularly as an additional proof that the theory, which was very generally received at the time when acupressure of arteries was first practised, is incorrect. It was then, and is now, believed by many that if the two sides of an artery are held in contact they will unite. Neither clinical experience nor direct experiment support this view. The process of union goes on not where the vessel is com-

pressed, but at its cut extremity. The acupressure needle, or the clot, or both combined, may effectually arrest the hæmorrhage for a time, and thus allow the work of permanent repair to proceed without interruption at the end of the vessel—but they furnish a temporary obstruction only. The cut edges of the vessel are the parts which are permanently sealed. Thus, while acupressure may be practically an excellent means of arresting hæmorrhage, the theory which supposes that it does so by producing adhesion of the opposed sides of the compressed vessel must, I apprehend, be abandoned.

If the acupressure needle be left long enough to ulcerate through the vessel, the point at which the vessel is so divided becomes of course the cut surface, and the same process of repair then goes on at this point as would go on where the artery is originally divided, if the acupressure needle were sooner removed. From the length of time that the needle was allowed to remain in contact with the specimen before us a partial ulceration of the vessel has taken place, but on neither side of that ulceration was there any lymph deposited on the lining membrane.

In the present case the whole surface of the stump was found after death in a sloughing condition, and yet hæmorrhage from the femoral artery was completely commanded after the removal of the needle by the clot which had formed in its interior, and by the amount of repair (whatever that may have been) which had taken place at its cut extremity.

In the cases in which I have used acupressure for the arrest of hæmorrhage after operations, I have on the whole been satisfied with the results. I have never been able to procure complete union, such as is said so often to occur in Aberdeen; a considerable quantity of bloody serum has in my cases collected in the wound, and this has prevented its surfaces from remaining immediately in contact. After a time this serum has been discharged, and has been followed by some amount of suppuration.

A curious accident happened in a case in which I removed a patient's breast. The heads of two acupressure needles slipped down between the edges of the wound. I was informed that all the needles had been removed, and the patient left the Hospital with the wound nearly closed, two weeks and two days after the operation. After she had been a short time in the country a hard swelling appeared in the neighbourhood of the wound, and it was

feared that the disease was returning. A surgeon in the country, however, discovered the needles and extracted them.

Few cases could be accompanied by circumstances more unfavourable to the repair of a large artery than the one to which I have above particularly referred. From his first admission into the Hospital, although he did not complain, there was no indication of any reparative power, and yet the femoral artery was secured by acupressure only. On account of the great debility of the patient the acupressure needle was left in longer than usual. It, however, accomplished its object, and I have brought the case under the notice of this Society, as indicating:—1. That the large arteries may be effectually commanded by acupressure; 2. When this is practised, and the acupressure needle subsequently removed, that the vessel is permanently sealed, not in the line where the pressure was applied, but at its divided extremity.

XXI.—*Effect of Acupressure on the Femoral and Profunda Arteries.* By James W. West. *Communicated by* Mr. Callender. *Read April* 24, 1868.

THE history of the case is briefly as follows: A delicate, strumous young woman, aged 26, who had suffered from extensive and deep ulceration of the lower part of the thigh and the neighbourhood of the knee-joint, the result of a burn received some years before, and for which every kind of treatment had been employed, but without any improvement, submitted to amputation of the thigh in the upper third by antero-posterior flaps. The femoral, profunda, and two other arteries were acupressed by three needles. Very little hæmorrhage occurred at the time of the operation, and none afterwards; the patient, however, never thoroughly rallied, and died fifty-six hours after the operation. The vessels were found to be perfectly occluded by the pressure of the needles, and to have within each of them a small fibrinous conical clot. No blood had been extravasated between the flaps.

I may mention that I have employed acupressure with perfect success in amputation of the upper arm in a man aged 67, and also in cases of Syme's amputation and ablation of the breast, and I am so satisfied with its effects, that I should not hesitate to employ it for the arrest of hæmorrhage

from any vessel of whatever size. I think also that less suppuration follows its use than when ligatures are employed.

XXII.—*Case of Congenital (?) Aortic Disease.* By JOHN COCKLE, M.D. and F.E. ANSTIE, M.D.

THE patient is a man named Bowern, aged 40; the Society will see him presently. This is a case in which there is so singular a failure in the circulation that one's attention is arrested at once; there is no pulsation, or almost absolutely none, sensible either to finger or sphygmograph, in either of the radials or of the carotids, or in the femorals.*

The history of the man is as follows: He was delicate in health as a child, and was born of delicate parents; his mother died of a complication of disorders, of which heart-disease was one. He suffered great privation between the ages of 18 and 25, and at the latter period suffered a severe attack of typhoid fever. For some time after this he suffered from gnawing pain at the back of the head, which recurred regularly once a month, and lasted about eight hours at a time. About ten years ago he had a first attack of giddiness, while walking in the street; and soon after this he had a severe fall on the ice, striking his head; he was rather drunk at the time, and unfortunately has been liable ever since he was a

* A more successful sphygmograghic observation was taken on May 19, when the radial pulse was slightly more perceptible than at the time the patient was exhibited to the Society. It was found that although the extent of movement of the sphygmographic lever was very inconsiderable when the ordinary tension was employed (200 grammes) the effect was much increased when the pressure was augmented to 450 grammes. This result shows that in this case as in that of R. G. (p. 171) excessive smallness of the pulse may be associated with extreme hardness or resistance. It is necessary to add that the former observation was made with Marey's sphygmograph in its unmodified form, in which the pressure of the spring is insufficient for the investigation of pulses of great hardness.

J. B. SANDERSON.

Fig. 1. Observation taken May 19 (pressure of spring = 450 grammes).

Fig. 2. Observation taken at the same time (pressure of spring = 200 grammes).

young man to occasional outbreaks of drinking. From the time of the fall he has never ceased to feel a pressure, and often severe pain, on the top of the head; the giddiness has progressively increased, and at present whenever he rises from his seat or walks he becomes vertiginous; the dizziness is also strongly provoked by the sight of moving objects around him. These cerebral symptoms have greatly increased during the last twelve months. On the other hand, he used to suffer for many years, if not all his life, from severe palpitation of the heart; lately, however, he has had but little of that except when he has been drinking; then it comes on with great violence. For about the last twelve months he has been liable to experience what he calls a 'choking' feeling at the top of the sternum, when he lies down; and he is also conscious of a 'churning' sensation, which he refers pretty distinctly to the site of the aortic valves.

On examination we observe as follows: The patient is a strongly built man, and indeed we find that though his health has been variable, he was rather above than below the average of muscular strength when a younger man, and (what is of some consequence) could run some distance without particular distress. He is very corpulent; the abdominal parietes, and especially the mammæ, are loaded with fat, which renders great care necessary in percussion, if fallacies are to be avoided. Observing the proper care to avoid this source of mistake, we find that the lung percussion is everywhere good; that the area of cardiac dullness is not at all unusually large; that the impulse (which is not strong) is quite in a normal position; that the lung percussion is everywhere clear, but that the anterior edge of the right lung is pushed outwards some inch and a quarter. We find a patch of absolute dullness, measuring about $1\frac{3}{4}$ inches in diameter, its centre corresponding to the sternal border of the second intercostal space. There is marked relative dullness all the way up the sternum. The centre of the absolute dullness is also the maximum point of a thrilling impulse which can be plainly felt and sometimes seen. There is a systolic bruit, the maximum intensity of which corresponds to the point of maximum impulse at the base of the heart; this bruit extends over the whole area within the dotted lines, but is much stronger in the right chest than in the left. It fades away over the ventricles, and is not audible at the apex. It reaches up to the clavicles on both sides, but not into the vessels of the neck. It is scarcely heard at all in the

direction of the pulmonary artery. The second sound of the heart is extraordinarily loud and heavy, and can be heard even in the apparently pulseless carotids. There are no signs of any compression of either lung or bronchus.

We need hardly say that this is a most extraordinary case. The man has been under Dr. Cockle's observation for three months, and his symptoms have not at all varied, and from his description there is a tolerable certainty that he has had them for many years. As much as ten years ago he was consulting various metropolitan physicians on account of palpitations, vertigo, and pains in the head; and we can scarcely doubt that the cardiac disease existed then. There can be no doubt there is an aortic valvular obstruction, and that the first part of the aorta is somewhat dilated. But, Sir, we shall ask you as President to exercise your power of nominating a committee of experts to assist us in forming an opinion as to what the nature of this obstruction may be. We must, however, call this Society's attention to these remarkable points:—

1. Here is an aortic obstruction decided enough almost to annihilate the sensible pulse; yet there is an extraordinarily loud second sound of the heart. This is directly contrary to all experience.

2. The aortic obstruction, though evidently considerable, has caused no hypertrophy.

3. The entirely chronic nature of the symptoms, the fact that he has really suffered more or less all his life, make one think that this may be a congenital affection. It may of course be argued against this view, that the more severe symptoms of which the man has complained within the last few years would have appeared at an earlier period. It is well known, however, that many grave congenital heart lesions do remain latent for years, and then produce formidable symptoms.

4. Against the very obvious hypothesis that the affection in this case is an aneurism, the long duration of the symptoms is, we think, a sufficient objection. And it may further be observed, that although there is doubtless some aortic dilatation, this cannot, from the physical signs, be large, and only a very large aneurism, pressing extensively on the great vessels, could produce such a general extinction of the arterial pulses as is here present.

Report on Case of Aortic Disease. Read April 24, 1868.

The case referred to us for examination is that of a rather corpulent man, aged 40, who for many years has been subject to attacks of giddiness and more or less constant pain or sensation of pressure on the vertex, which of late have so much increased, especially during exertion, as to incapacitate him from active employment.

It is not necessary to enter fully into the history and general symptoms, which have been detailed by the authors; but we shall briefly advert to the points to which our attention has been directed — the absence or extreme weakness of arterial pulse, and the signs presented by the heart and large vessels.

On both occasions on which we examined the patient we could feel a feeble pulsation in the radial artery at the wrist, but none whatever in the carotid, temporal, femoral, or any other arteries of the limbs. It is to be borne in mind that the man is decidedly fat, and this may account for the fact that the feeble pulsation, barely felt at the wrist, ceases to be perceptible in deeper seated arteries.

There are no further evidences of extreme weakness of circulation, such as lividity or excessive pallor of the surface, or coldness of the extremities.

The dimensions and position of the heart, as determined by the situation and force of the impulse at the apex, and by the extent of dullness on percussion, appear to be about normal.

The natural sounds of the heart are also about as loud as usual in the natural region; the second sound rather more distinct than usual to the left of the midsternum. The systolic sound is accompanied by a murmur, audible over every part of the heart, and more or less in the whole front of the chest, but louder at the base than at the apex, and loudest at the right margin of the sternum, between the second and third ribs, where it is grating, and accompanied by a thrill, very obvious to the touch. At this spot, also, there is complete dullness on percussion, to the extent of the size of a florin, and a pulsation, evident to sight and touch, corresponding with that of the heart, but distinct from it, and swelling at each beat, so as to tilt the aural end of the stethoscope outwardly, when the pectoral end is applied to any part of the margin of the pulsating space. In this pulsating spot the sounds are

much louder than elsewhere—not only the systolic murmur but the second sound (from the closeness of the aortic valves); but instead of being clear and simple, as to the left of the sternum, it is preceded in some beats by a short grating, as if the valves before closing permitted a momentary regurgitation.

Above the pulsating spot the sounds suddenly lose their thrilling loudness, being screened by the intervening margin of the right lung, but they are quite distinct up to the clavicle. Above that bone they suddenly cease, or, if heard at all, it is only faintly, and as at a distance; and no trace can be heard in the interscapular spaces, or along the course of the descending aorta to the left of the spine.

It appears, therefore, from this description: 1. That the heart is healthy, except the aortic orifice, in which there is sufficient disease to cause a loud systolic murmur, not however interfering with the closure of the valve at the diastole, although that closure is sometimes preceded by a very short grating regurgitation.

2. That there is such a dilatation of the aorta, apparently just above its orifice, as to bring a portion of the artery, between one and two inches in diameter, in contact with the walls of the chest. This dilatation, to reach the surface thus largely, so as to form a pulsating tumour, can hardly be other than saccular or aneurismal.

3. That the sudden disappearance of the arterial sounds above the clavicles, and the imperceptibility of the pulse in all the arterial branches, except the radial, where it is very feeble, can be accounted for only on the supposition that there is a narrowing, or some other cause of great but not complete obstruction, in the aorta beyond the dilated portion.

This hypothesis would account for the attacks of faintness, or giddiness, on exertion, to which the man has been subject, as well as for his increasing feebleness of body and mind; and is quite compatible with the existence of the saccular dilatation of the ascending aorta, and of the disease of the orifice. That this last lesion, although belonging to the group called obstructive, as causing a murmur with the systolic current, does not materially obstruct that current, is obvious from the strong pulsation in the dilated artery, and the distinctness of the second sound. The cause of the deficiency of pulse in the arteries in general must therefore exist beyond the dilated portion of the aorta.

As remarked by the authors of the paper, the existence of

some degree of hypertrophy of the heart might have been expected in a case attended with so much obstruction to the arterial current; but it may be added that the connection of hypertrophy with an obstruction in front is by no means certain, and might be less looked for if the obstruction is not at the arterial orifice, but at a point more remote from the heart.

On the question of the origin of the several lesions in this case, the reporters cannot form a decided opinion, but they do not find sufficient reason for supposing it to be congenital, and rather incline to the supposition that the arterial obstruction commenced about the time of the first attack of giddiness, that it has been increasing during subsequent years, and possibly that the dilatation of the aorta is of more recent date.

C. J. B. WILLIAMS.
J. B. SANDERSON.

XXIII.—*On Tracheotomy as a means of cure in Chronic Laryngeal disease.* By THOMAS BRYANT. *Read April* 24, 1868.

THE main object I have in view in the following communication is to consider the value of tracheotomy as a means of cure in chronic inflammatory affections of the larynx; for I have reason to believe that this subject has not received that amount of consideration it deserves, and am disposed to think that as a curative means in ulcerative laryngeal disease the operation of tracheotomy is of great value.

It will probably be admitted by all surgeons that, as a broad rule, tracheotomy has been hitherto generally performed in the class of cases to which I have alluded, to rescue patients from the danger of impending suffocation, and to prolong life when threatened from laryngeal disease; and yet it must have struck most men when watching cases, which have been operated upon under these extreme circumstances, how rapidly all laryngeal symptoms disappear, and ulcerative action undergoes a reparative process both in the pharynx and larynx, after a new passage has been obtained for the respiratory act, and complete quiescence of the parts has been secured by means of tracheotomy.

It is from a knowledge of this latter fact, gained from

observation, that I have been led to form an opinion that it would be wise to perform the operation of tracheotomy in ulcerative laryngeal affections at an earlier period than has hitherto been practised, with the view of arresting the progress of the disease, and probably of saving the larynx as a respiratory and vocal organ, anticipating the time when the operation may be demanded for the purpose of preventing impending suffocation, and when, if this object be secured, there is every reason to believe the larynx as an organ of voice will have been irreparably lost, and as a respiratory passage permanently destroyed.

There would be little or no difficulty in bringing forward many cases to illustrate the truth of what I have just stated, for the experience of every surgeon, and the records of every hospital, can furnish instances of patients who have been successfully tracheotomised as regards life for ulcerative laryngeal disease, and who have for years been wearing a silver tube in the trachea; the larynx, however, both as an organ of voice and of respiration having been nearly if not completely destroyed. I propose, on the present occasion, to bring forward the brief records of three such cases—all of which have taken place in my own practice—one patient having worn the tube for eight years, a second for three, and the third for nearly two. In these cases it will be seen that not only all signs of progressive disease in the pharynx and larynx rapidly subsided after the operation had been performed, but that a reparative process as rapidly appeared, and the cases went on to a good recovery. It is true that in all these instances the local disease had advanced too far to allow of any hope being entertained that the larynx as a vocal or even respiratory organ might be subsequently restored; yet the repair was rapid enough to suggest the idea that such an end might have been secured had the operation been undertaken at an earlier period, when the disorganising and ulcerative process had not advanced to such an extreme stage.

In one case, however, this end was partially gained, for the man can speak with sufficient clearness to be understood on closing the tracheal tube, although sufficient air is not admitted through the laryngeal orifice for respiratory purposes. In a second case also the laryngeal orifice is partially open, for some amount of voice is still present, and this induces me to believe that if the operation had been undertaken earlier a better result would have been secured.

There is yet another argument in favour of the suggestion I have just made, which to my own mind is of some force, and it is based on the very unsatisfactory result of any other plan of treatment which is usually adopted in these cases.

So far as my own experience tells me, when once a disorganising change has been established in the larynx, in by far the majority of cases this change continues with various degrees of rapidity till suffocation is produced and life threatened; and it is then only when tracheotomy has been performed that the local disease begins to amend.

In too many instances operative interference is postponed to too late a period for even this result to be obtained, the patient being frequently in a dying state before such an operation is demanded or thought justifiable; for it may here be stated that every patient with ulcerative disease of the larynx is not far from death's door, and that at any moment a laryngeal spasm may take place and destroy life. But in the present day surgeons and physicians have only thought of tracheotomy as a last resource, as the means of warding off death when threatened from impending suffocation, and never in the light of a cure for the disease itself. I would wish them to look upon it in such an aspect, for I believe that we have in tracheotomy a valuable remedial agent in ulcerative laryngeal disease—syphilitic or otherwise—and that we have it in our power in many cases not only to save life by such an operation, but to preserve the larynx as an organ of voice and respiration.

At what stage of ulcerative disease of the larynx, it may fairly be asked, should tracheotomy be performed for purposes of cure?—that is, of cure so far as the larynx is concerned as an organ of voice. It is quite clear that it must not be postponed to a late period of the disease, for, as shown by the cases appended to this paper, there is little hope of securing such a result under such circumstances.

It should not be performed in the very early period of the affection, whilst any reasonable hope still exists that by a milder treatment a successful result may be secured. But, I take it, it should be undertaken in all cases when the disease has been steadily going on from bad to worse; when general and local treatment has failed to make any impression on the local affection, and when it is clear that serious interference with the respiratory act is not far distant; when indeed, it is quite clear that ulcerative disease of the larynx

is regularly established, and that a fatal spasm of the part may at any time be expected.

It is under such circumstances that tracheotomy promises to be of great value. To give any more definite rule is clearly impossible—each case must be judged on its own merits; but it is only fair to believe, that if some good success is to be obtained even by the present practice of postponing tracheotomy till life is threatened—when the powers of the patient are always low and the larynx as an organ of voice may be looked upon as probably lost—a much better success may with some confidence be looked for when the operation is undertaken with the general condition of the patient good, and the local state of the larynx reparable. Let the surgeon place the larynx by tracheotomy in such a position that, as a respiratory and vocal organ, it may for a time cease from its duties; give it, in the phraseology of the day, physiological rest, and deprive it of the irritating stimulating influence caused by the passage of a current of air over its ulcerating surface; secure the life of the patient during the repair of the local disease by the introduction of a tube into the trachea below the cricoid cartilage, and then may a good expectation be entertained that the laryngeal disease will rapidly disappear, and that the larynx will be preserved as an organ of voice as well as of respiration.

From past experience I have great hopes that, in the future, good success is to be obtained by this practice, and I have not consequently hesitated to bring it before the notice of the members of this Society.

To these remarks I would add two observations, that the tracheal tube should always be removed as early as possible—that is, as soon as all evidence of local laryngeal disease has disappeared; and that when the tube has to be left in for a lengthened period, it should never be allowed to remain unchanged for more than three months. The danger of not observing this rule is well exemplified in Case I.

CASE I.—*Tracheotomy for Syphilitic disease of the Larynx; Rapid recovery of the local affection; danger of wearing Tracheal tube too long.*

Mary A. M., aged 32, a childless married woman, came under my care, at Guy's Hospital, on May 23, 1860, for a chronic disease of the larynx of ten months' standing. It was clearly syphilitic, for the body was covered with an eruption

of specific maculæ. The voice had nearly gone and the respiratory act was one of great difficulty. Spasmodic attacks of the larynx, threatening suffocation, rendered surgical interference a necessity. Under chloroform, tracheotomy was performed on July 6, and after that date all laryngeal symptoms rapidly disappeared, although small pieces of bone came away with the expectoration. The woman left the hospital in a month, with the tracheal tube fixed in, convalescent. She reappeared every few months to have the tube changed; but on one occasion, from domestic reasons, she allowed six months to pass, when the outer tube had become so worn away as to have become perforated, and the granulations of the tracheal wound showed themselves on its inner surface. Great care was required in the removal of the tube, for the slightest force would have broken the tracheal end from the shield, and endangered life. Since that time the tube has been carefully changed every three months. On April 26, 1865, nearly five years after the operation, a careful examination of the larynx was made with the laryngoscope, when the epiglottis was seen to be bent backwards over the orifice of the larynx, from the contraction of the aryteno-epiglottidian folds of mucous membrane, and the rima completely closed—all the parts appearing cicatricial.

On several occasions when the tube has been removed, the patient has been allowed to breathe through the artificial opening; but the feeling of suffocation rapidly appeared, and a general blueness and congestion of the head and neck indicated the dangerous nature of the experiment. When this paper was read this woman had no voice—not a particle of air passing through the natural laryngeal opening.

The rapid disappearance of all symptoms of laryngeal disease after the operation is well seen in this case.

CASE II.—*Syphilitic disease of the Larynx; sloughing of the Pharynx; Tracheotomy; rapid convalescence.*

William Freeman, æt. 35, a soldier, of intemperate habits, was admitted into Guy's Hospital on February 22, 1865, under the joint care of Dr. Rees and myself. He had been much abroad, and had contracted syphilis eighteen months before his admission. He had been salivated for the local affection by some practitioner in the town, and had had a skin eruption three months after the chancre. His throat had been sore for three months before his admission, and on one occasion

he expectorated a piece of bone. When admitted, the whole pharynx and soft palate was sloughing. He had had laryngeal symptoms for three weeks, and these had somewhat rapidly become worse, for one spasmodic attack of dyspnœa occurred daily, and his breathing was always very difficult. The parts about the neck were somewhat swollen.

Two days after his admission, as all his symptoms had become worse, tracheotomy was suggested, and performed on February 24, under the influence of chloroform. The operation was performed hastily as the heart ceased to beat and respiration stopped during the process; but under artificial respiration animation was restored, and it has seldom fallen to my lot to witness so rapid and so marked a change as was seen in this case after the introduction of the tube; for, when the suspended animation had passed away, and the alarm attending such an incident had subsided, the respiratory act soon became quiet and natural, all œdema of the neck speedily disappeared, and the constant coughing and irritation of the throat subsided; all sloughing of the pharynx at once ceased, and every bad symptom passed away. In three weeks the palate had cicatrised and the laryngeal symptoms had entirely gone. In three months he left the hospital convalescent, wearing the tube, which he is still doing, being quite unable to exist without it. On June 8, 1867, I made a careful examination of the throat with the laryngoscope. The epiglottis was drawn backwards over the rima and to the right side, partially obscuring the laryngeal opening. The rima was evidently much contracted, and appeared as an irregular orifice; all the parts were much drawn together and cicatrised. The whole of this man's soft palate had disappeared.

It is to be remarked that at the present time there is still some room for the passage of air through the larynx, the man making himself understood at all times, but most clearly by placing his finger over the tracheal tube. The tube is large enough to allow of the introduction of sufficient air into the lungs for respiratory purposes, and yet small enough to allow of part of the air to pass through the natural channel for purposes of speech.

CASE III.—*Ulcerative Laryngeal disease; Tracheotomy for impending Suffocation; rapid convalescence.*

John S., aged 23, was brought to Guy's Hospital on Sept. 25, 1866, having been picked up by some stranger in a back street in an almost dying condition from suffocation. He came into my hands for treatment, and tracheotomy was performed as rapidly as possible. When admitted he was quite unconscious, and the respiratory act was hardly to be made out. The pulse, however, could just be felt. After the operation he gradually came round.

A very uncertain history of his case could be made out. He had no occupation and lived as he could—he appeared to belong to the criminal class. He could not give any distinct history of syphilis, although he had had a skin eruption, and was the subject of frequent sore throat. He had had an ulcerated throat for three months, and enlarged cervical glands in both sides of his neck. He stated that the difficulty of breathing had only come on the day of his admission into the hospital. I should say that the operation of tracheotomy was a very difficult one, the parts in front of the tube being much swollen.

After the operation the œdema of the neck rapidly disappeared and the ulceration of the throat healed. On Oct. 8, or the thirteenth day, the tracheal tube was removed, respiration apparently going on subsequently quite naturally; but on the 18th, or after ten days, the difficulty in respiration again suddenly reappeared, threatening life. Relief was again at once afforded by the reintroduction of the tube. On Nov. 6 a careful examination of the larynx was made with the laryngoscope, when the whole organ was seen to be red and œdematous, the rima of the glottis being clearly closed.

By Nov. 13, the symptoms had again apparently subsided, and it was deemed right to remove the tube, but with no good result, for after two days they reappeared, although not in such severity, and the canula was again introduced.

Iodide of potassium with tonics were given during this period.

The pharynx soon healed and the laryngeal symptoms disappeared, the man leaving the hospital on Dec. 20, 1866, convalescent. He returns to the hospital every three months to have the tube changed.

XXIV.—*Case of Comminuted and Secondarily Compound Fracture of the Femur, extending into the Knee-joint. Treatment by Carbolic Acid.* By ARTHUR E. DURHAM. *Read May* 8, 1868.

JAMES EGLINTON, a healthy, well-nourished lad, sixteen years of age, was admitted into Job Ward, Guy's Hospital, on May 12, 1867.

He was at first under the care of my colleague, Mr. Poland. In the course of a few days he came under my charge.

On the morning of his admission, about seven o'clock, the patient fell from a horse harnessed to a heavy waggon, and the wheel or wheels of the waggon passed over the lower part of his right thigh, just above, or just about the knee. He was brought at once to the hospital.

An oblique fracture through the lower third of the femur was readily made out. The lower extremity of the upper fragment was forced almost through the skin, on the inner side of the limb just above the knee. There was great deformity of the injured part, and very considerable shortening of the limb.

It was surmised that the knee-joint was implicated in some way or other; but the exact state of the case was not definitely ascertained until a subsequent period.

Chloroform having been administered, attempts were made to put the parts into proper position. A long straight splint was applied, and extension was made and maintained by means of a perineal band. The deformity was thus much diminished, but the result was not altogether satisfactory. It was, however, deemed wise to abstain from prolonged manipulation, lest the soft parts should be further injured, and the fracture become compound.

Four hours later the lower part of the thigh was very much swollen, and the knee-joint was considerably distended. The foot was cold. Pulsation of the tibial arteries was barely, if at all, perceptible at the ankle. The patient complained of great pain. Ice was applied over the injured parts. Towards evening a subcutaneous injection of morphia was administered.

The next day the swelling was found to have increased. Fluctuation through the joint was very distinct. Pulsation

of the tibial arteries could not be felt. The foot was still cold. The skin of the injured part was severely and extensively ecchymosed.

During the following week little or no increase of swelling occurred. The foot gradually recovered its temperature, and pulsation of the arteries became perceptible. There was but little constitutional disturbance; but morphia injections were required at night in order to procure sleep.

Ten days after the accident the general swelling had somewhat diminished. But the ecchymosed skin appeared unhealthy in places, and about to ulcerate through. Inflammatory blebs showed themselves.

Three or four days later the skin gave way at one spot. Through the small opening thus formed a thin sanious discharge scantily escaped from the extensive semi-fluctuating swelling.

On May 26, chloroform having been administered, I made an incision three or four inches in length into the swelling along the inner side of the knee and adjoining part of the thigh; and with my fingers turned out eight or ten ounces or more of clotted and decomposing blood and pus. I found that the lower portion of the fractured femur was lying obliquely across the space thus cleared out, and that it had been split longitudinally, rather on the inner side of the median line. The split, into which the finger was easily introduced, ran between the condyles into the knee-joint. The inner condyle was pulled down and somewhat rotated, probably by the action of the inner head of the gastrocnemius.

The fractured surfaces and ends of the bone were distinctly seen white and bare. There were no visible indications of reparative action; nor, indeed, is it conceivable that there could have been, inasmuch as the ends of bone were some distance apart, and separated and surrounded by breaking-down blood-clot. Having cleared out the general cavity, as well as the interior of the knee-joint, as completely as possible, I proceeded to manipulate the fragments of bone into as good position as I could. Considerable aid was of course afforded by extension and other movements of the limb. A long straight splint was supplied, and the parts were fixed in as favourable a position as practicable.

This having been done, I freely and thoroughly mopped the

general cavity, and also to a great extent the interior of the knee-joint, with a mixture of pure carbolic acid and glycerine—one part of the former to three of the latter.

The cavity was then loosely stuffed with strips of lint soaked in a similar mixture of carbolic acid and glycerine. The edges of the wound were brought together above and below, and left widely apart in the middle. The whole was covered with a pad of dry lint, and then completely shut in by a series of strips of adhesive plaister.

When the effect of the chloroform had passed off, the patient did not complain of much pain.

The next day there was no symptom whatever of constitutional disturbance, nor, indeed, did any such symptom arise throughout the further progress of the case.

Four or five days after the application the coverings of adhesive plaister and dry lint were removed; and some of the mixture of carbolic acid and glycerine was poured upon the lint in the cavity.

Coverings of dry lint and adhesive plaister were again applied.

On June 6 (i.e. eleven days after their application) the dressings were entirely removed. The cavity had considerably contracted, and appeared to be rapidly filling up. It was lined, so far as could be seen, by perfectly healthy granulations. Similar granulations completely covered and concealed the bone, which before had been only too visible. The granulations were covered by the scanty, whitish, somewhat tenacious pseudo-pus, which is usually observed after the application of carbolic acid to a healthy healing surface. There was not the slightest trace of fœtor perceptible. Strips of lint, soaked in the mixture of carbolic acid and glycerine, were again loosely stuffed into the cavity, and the whole was covered up and shut in as before by dry lint and adhesive plaister.

At the end of a week the dressings were again removed, and it was found that the cavity had very rapidly filled up, and cicatrisation was advancing.

From this time until the middle of July strips of lint, soaked in the mixture, were applied and changed daily. Filling-up and cicatrisation advanced at first very rapidly, afterwards very slowly, and finally the reparative processes seemed at a stand-still. The carbolic acid was then discarded, and a gently stimulating poultice applied. Complete cicatrisation very speedily resulted.

The straight splint, which had been constantly worn up to this period (the beginning of August), was now removed.

The fractured ends of the bone were firmly united. There was no appreciable mobility of the knee on moderate manipulation. The weight of the body could be sustained upon the limb without pain.

A moulded leather splint was fitted on, and ordered to be worn for some considerable time. On September 18 the patient left the hospital, thoroughly well in health, with a limb upon which he was able to stand, and with which he was able to walk; but which certainly was slightly shorter than the corresponding limb, and apparently fixed in a straight position.

Since he left the hospital the patient has presented himself from time to time for examination and advice. By friction, gentle manipulation, and exercise, he has been enabled so far to recover the use of his limb that he can now scarcely be said even to 'walk lame.' When I examined him some six weeks or two months ago, there was very little noticeable shortening of the limb, and there was good fair mobility of the knee.

However, the lad is present, so that members of the Society may examine him for themselves.

Remarks.—Little need be added by way of remark. The facts of the case, so far as they go, speak for themselves, and explain themselves.

That the accident was serious, the injury very severe, and the result far better than might have been anticipated, cannot be doubted.

The questions arise: How far is the favourable issue of the case to be attributed to the treatment adopted? How far, on the other hand, may it be said to have been attained in spite of what was done?

Now, it is perfectly true that in this case the patient had in his favour youth, good health, a sound constitution, and a patient temperament. And it is very likely that under ordinary treatment he might have recovered; but it is impossible, I venture to think, that he could have recovered more rapidly, or more perfectly, than he has done. Nay, more, I doubt very much whether he would have recovered so rapidly and so perfectly but for the treatment which was adopted.

I would especially direct attention to the following points: In spite of the extent and severity of the injury, there was from first to last no constitutional disturbance worth men-

tion; there was no exhausting suppuration; the discharge from the granulating surfaces was very slight, and absolutely free from fœtor.

In conclusion, I would state that I have extensively and, as I believe, fairly tried 'the carbolic acid treatment' in compound fractures and other cases. I have not, however, by any means met with such brilliant success as Professor Lister can fairly boast. But then I have also tried acupressure very extensively, and, I believe, tested it as severely as any surgeon in London. And, again, I have been very far as yet from meeting with the encouragement and reward which have fallen to Professors Pirrie and Keith.

I cannot but think that in these, as, indeed, in many other instances (and I know that my experience is by no means peculiar), our want of success is due to the constitutions, habits, and states of more or less depraved health of the patients with whom we have to deal in our London hospitals, rather than to faulty principles of treatment, or to mistakes in our methods of proceeding.

In the present case my patient was a very favourable subject. The result was excellent. Professor Lister could have wished for nothing better. But my general results in the use of carbolic acid do not bear comparison, in point of successful issue, with those of our confrères north of the Tweed. I am disposed to attribute such want of success as I may have met with to faulty constitutions or bad states of health on the part of my patients, or to the severity of the injuries they may have received, rather than to any fundamental error in the principle of 'the antiseptic method of treatment.'

XXV.—*On the use of the Chloride of Zinc solution in the treatment of Abscess connected with diseased Joints.* By Campbell De Morgan. *Read May* 8, 1868.

It is not my object in this communication to provoke a discussion on the comparative merits of the various antiseptics now in use, but rather to insist on their utility in general—as local applications—though illustrating the fact by reference to the action of chloride of zinc only.

It may, I believe, be truthfully asserted that more good would attend the use of these agents, and especially in hospital practice, than would follow even the most brilliant

improvement in surgical operations. Here is a striking fact by way of example :—

In the Middlesex Hospital antiseptics have for some years been used in almost all cases of wound or operation. The Surgical Registrar's report for the last year shows that while sixteen cases of erysipelas were admitted into the surgical wards, in only two instances did it occur—and then in the most trifling form—in the Hospital. In neither of those cases was an antiseptic applied for a long period before the occurrence of the erysipelas. And such has been our experience from the time antiseptics have been used.

The agent principally employed has been the chloride of zinc; of late both carbolic acid and sulphurous acid have been used, and often with excellent results, but I cannot say that I have seen any advantage which they have over the chloride in application to ordinary wounds. In cancer cases I have no doubt of the superiority of the chloride, from its power of penetrating deeper into the tissues and coagulating any floating particles of the disease.

The action of the chloride appears to be this: It forms with the albuminous elements a coagulum over the surface of the wound. This coagulum is incapable of decomposition, and it—and any fluids which may exude into the cavity of the wound—are kept free from taint. So long as this condition is maintained, decomposition of the fluids which may be secreted is prevented—or is at least but little prone to occur—for in most cases decomposition of secreted fluids arises from contact with matter already decomposed. The blood and serum and débris of tissue lying in a recent wound will almost certainly become decomposed in a short time if left to themselves. The sickly smell which is often perceived in wounds twelve or fourteen hours after operations, when no antiseptic has been used, is evidence enough of this; while it is entirely prevented by the efficient application of antiseptic agents.

I very much doubt whether it is to the presence of living germs in the atmosphere alone that the putrefactive decomposition which takes place so often when air is brought in contact with organic matter is due. Of course no one denies that the air is loaded with animal and vegetable germs which may grow under favourable circumstances and set up a process of decomposition in any animal fluid. And it is equally certain that when air is altogether excluded from a wound or cavity decomposition will not so readily

occur, or will not occur at all; but it may take place when the atmosphere is excluded, and nothing tends to its prevention or its arrest more decidedly than a free exposure to the air.

Every surgeon knows the efficacy of a free opening or a drainage tube in destroying the fœtor of a foul abcess, and causing the discharge of healthy pus.

It is probable, however, that there are germs embedded in the tissues themselves which, under favourable circumstances, take on active growth in the presence of the atmosphere or of pure oxygen. The favouring circumstances might be either the deficiency of vital activity in the tissues, or the deteriorated quality of the air when pent up in contact with them.

Whichever view is correct, it seems that when antiseptics are applied to the tissues or their secretions, either, in the one case, these germs are destroyed and the atmosphere has no longer any power of producing decomposition, or, in the other case, the surface or secretion is so altered in character as to destroy the germs which are deposited from the atmosphere.

The cases I am about to mention show that where the chloride of zinc has been freely used in the treatment of abscess under the most unfavourable circumstances—that is, where in scrofulous subjects they have been connected with diseased joints—their cure has been as rapid as would be the case in abscesses of the same extent in the most healthy persons, placed under the most favourable conditions. I have taken them because they all happened to be in the Hospital at the same time.

A girl, aged 12, who had several cicatrices resulting from scrofulous caries, was admitted into the Hospital in December last, with considerable pain, swelling and redness about the left knee—especially to the outer side, where there was evident fluctuation; the knee was slightly contracted; a little above was a cicatrix of an abscess which had existed some years before.

As the matter was tending towards the surface, and the child was suffering locally and constitutionally, I made a large incision into the abscess, and introducing my finger passed it freely into the knee-joint. The cartilage of the patella felt roughened, but I could detect no caries. About three ounces of pus mixed with a large quantity of curdy matter was let out, and the whole of the exposed surface

then sponged repeatedly and roughly with a solution of chloride of zinc, forty grains to the ounce. The sponge was used sufficiently roughly to rub off the curdy matter which adhered to the lining of the cavity. This was done on January 29.

On the 30th the wound, which had been closed by suture, discharged a thin dark coloured fluid. For some days afterwards there was a slight discharge of matter, but, by February 10, the wound was almost entirely healed. She left the Hospital on March 31, having been able to walk for some time before. Indeed she was kept in because of her having inflammation, apparently periosteal, in the ankle of the opposite foot.

A girl seven years old came in for disease of the hip. There was tenderness over the trochanter and in the groin, considerable distortion of the pelvis, so that there was apparent shortening to the extent of 3½ inches, and great pain on making movements—especially of abduction and extension. The natural folds of the joint were obliterated. After her admission an abscess made its appearance on the front and outside of the thigh at the upper part, which so increased that an opening became necessary.

An incision was made at the outer side, large enough to admit three fingers, a considerable quantity of pus with curdy matter was let out, and the surface of the abscess was treated in the same way—by rough sponging with the lotion.

The finger could be passed round the neck of the femur, but no diseased bone could be felt. The wound was stitched up.

The next day it was evident that the sac contained fluid, which increased in quantity, and on the third day was let out: it proved to be a thickish dark fluid like altered blood. Next day a little of the same kind of fluid was pressed out, and then the wound healed entirely, no further secretion of any kind having taken place.

She was kept quiet for a considerable period on account of the hip, but has been for some time walking about, and is daily gaining power in the limb.

In another case, a girl aged six, there was a large abscess in the right loin with angular curvature at the lower dorsal vertebræ. The spinal disease had existed for six months, the abscess was first noticed two months ago. On February 26, the abscess was largely opened, and treated in the same way with the chloride lotion. No bone could be felt

by the finger. The abscess, however, extended round the front of the vertebræ and to the opposite side.

The next day she was sitting up in bed at play; she has never had a symptom of constitutional disturbance, and there are now discharged only a few drops of matter in the course of the day.

A lad, aged fourteen, came to the Hospital early in April. His left elbow had been excised by my colleague, Mr. Lawson, two years ago. He has a serviceable arm, but with very little bony formation about the part. On his admission there was great pain, tenderness, and swelling of the right elbow. A sinus at the outside led to some exposed and roughened bone. On the outside was an extensive abscess. The abscess was opened by a large incision on April 8, a quantity of pus mixed with curdy matter was let out, and on the introduction of the fingers the elbow-joint was found freely open, and the bones separated from one another so that the finger could be passed freely between them. The surfaces were not carious, but the cartilage in a roughened state could be felt in many places; where it was removed the bone was tolerably smooth and firm.

The forty grain solution of the chloride of zinc was freely applied, the whole of the surfaces being firmly rubbed with sponges soaked in it. The wound was stitched up.

The next day the boy was free from pain, but there was some tenderness and fullness about the joint; not more, however, than had been present before the operation. In a few days some matter began to discharge; then for about a week there was free suppuration, which soon began to decline; and he is now well. There is no discharge or tenderness, and he can move the joint without pain.

Now, I believe that these cases have all gone on as well as they have done in consequence of the healthy state in which the parts have been maintained immediately and for some time after the operations, through the agency of the antiseptic employed. Were they isolated cases the success might be thought to be accidental; but they are only a few out of many.

I do not pretend that every case will do as well. I have seen no instances in which harm has been done by the lotion; but some cases have occurred in which the suppuration has gone on as profusely, and for as long a time, as if the abscesses had been simply opened and left to run their natural course.

XXVI.—*Excision of both Elbows.* By T. Holmes. *Read May* 22, 1868.

WALTER BULL, aged 5, was admitted into the Hospital for Sick Children, on April 6, 1867, on account of strumous disease of the elbows. He had also strumous sores on the face and leg, and disease of the first phalanx of the left middle finger. He was in a state of very great suffering, and much exhausted by discharge, pain, and loss of sleep. The right elbow had been diseased for about six months, and the left about four months. There was abscess leading into the joint on both sides, much swelling, and great lateral motion, but there was not much evidence of disease of the bones. As the child's health was suffering greatly I determined to remove the elbow which had been longest diseased, and in which he appeared to complain most of pain. The right elbow was accordingly excised on April 11, by the single incision. The operation was extremely successful in affording him the relief which was sought by it. He began to sleep and feed well, and evidently improved in health; but soon the pain recurred in the opposite elbow, accompanied by increased suppuration, and as the former excision had gone on well, and the arm was now sufficiently united to allow him to make use of it to feed himself, I determined to operate on the left elbow. This was in much the same condition as the right, viz. the seat of abscess, with destruction of the ligaments so as to allow of much lateral motion, the synovial membrane greatly degenerated, the bones exposed in one or two places, but not deeply diseased. Little need be said as to the after-treatment. The wounds went on uninterruptedly well, and on August 1 the child was sent to Brighton. By this time both arms had been relieved from the splints, and the boy was encouraged to use them as much as possible, but the wound of the last excision was not quite healed.

At present he is in very good general health, so much so that one who had only seen him on his first admission would hardly recognise him. The parts concerned in both excisions are perfectly sound. Both arms are very moveable, and the child can put either hand into his mouth, and nearly straighten either arm.

Remarks.—This is, as far as I know, the first case of excision of both elbow-joints which has been published. I have

reason to believe, however, from enquiries which I have since made, that Mr. Syme has performed the same operation, but I cannot find any published account of it. I thought this case worthy the attention of the members of this Society for a few minutes, as showing three things connected with the operation of excision of the elbow: 1. That general strumous affection is no bar to the success of an operation of this kind, but that if more than one joint requires excision they may be excised in childhood with good prospect of a successful issue. 2. That in disease limited, or almost limited, to the soft tissues of the joint, a more useful arm is obtained by boldly removing the requisite and proper amount than by partial excision or the expectant treatment. By 'the requisite and proper amount' I mean the humerus just above the condyles, the ulna just below the coronoid process, and the articular head of the radius. Less than this amount should, I think, never be removed in this operation. 3. That the single straight incision is sufficient for ordinary cases, and if sufficient must be superior to the H-shaped incision, the transverse portion of which is liable to adhere to the ends of the bones and impede the restoration of motion, as Mr. Syme has pointed out, though he nevertheless prefers that incision.

XXVII.—*Case of Myelitis supervening gradually upon Concussion of the Spine.* By C. Handfield Jones, M.B. *Read May* 22, 1868.

W. W., aged 23, a healthy-looking male, a labourer, admitted October 11, 1867.

About nineteen months ago he was carrying a load of slates along a plank, when he tripped and fell stradlegs across the plank upon his nates. He did not feel much pain at the time, and continued to work for six weeks. Pain then came on in the lower back, sides of abdomen, and hips, and he gradually lost the use of his legs. He found difficulty also in passing urine; could not do it without a great effort. Has experienced a constrictive sensation in the abdomen. Pain is felt on pressing the ninth and tenth dorsal spines, but nowhere else; and a hot sponge also produces pain in the same situation. There is some question whether the seventh and eighth spines are not unduly prominent; the eighth deviates somewhat from the line. He is quite unable to

stand. When he is lying on his back he can extend the flexed limbs by voluntary action, but he has no power to flex them at all. In fact a week after his admission he could not stir his lower limbs in the least degree as he lay in bed, except by moving his trunk with the long muscles of the back. On my attempting to flex the lower limbs at the knees strong tremor of the muscles of the thighs (the quadriceps extensor, and perhaps others) is produced at first, but afterwards when the movement is performed gradually and gently no tremor occurs. No reflex movements are excited by tickling. Power of sphincters impaired; urine tolerably clear and acid. The sensory power of the lower limbs is very defective; is almost quite lost below the left knee. In the right leg sensation is also defective, but not quite so much as it is in the left. Has tingling in both feet at times. Has never had rheumatism or syphilis. Heart and breath sounds normal. No impairment of power of arms. Ordered: pulv. ergotæ gr. v. + extr. belladon. gr. $\frac{1}{2}$ in pil. ij. ter die.; and, six days later, a blister 2 × 3 to loins, to be dressed with savine ointment.

On Oct. 23 the dose of ergot was doubled. He had a little voluntary power over the toes, but could not move the ankles or knees. When the ankles were extended considerably strong tremor of the muscles took place. Sensation was rather improved.

26.—Can draw up—i.e. flex—his legs sometimes, not at others; could not at my visit to-day, but had done so in the morning. Urine turbid and alkaline.

Nov. 6.—Has much more motor power over limbs; can move them about well in bed, and even walk a little with the aid of a chair; sensation is still imperfect. He cannot always tell which foot I touch.

9.—Just shuffles along, dragging his feet with the aid of a chair and stick; the extensors of both thighs are agitated with violent tremor after this exertion. Pt. pil. c. ergotæ gr. xv.

16.—Is mending slowly; both feet are tolerably warm, the right feels to the hand warmer than the left. Temperature in popliteal space 92·12° F.; in axilla 97·88° F.

20.—Legs and feet very cold to-day. Temperature of space between first and second toes 77·4° F.; of space between thumb and index finger 95·3° F.; a difference of nearly 18° F. He passes urine easily; it is quite bright and clear. Ergot omitted. Ammon. carb. gr. v. + pot. iod. gr. v. + inf. gent.

co. ℥j. ter die. A seton to be inserted in the back over the original seat of tenderness.

25.—No progress. Hydr. perchloridi gr. $\frac{1}{16}$ + tr. cinchon. ʒj. + aq. ℥j. ter die. From this time he improved steadily; before the end of the year he could walk with the aid of a stick about one hundred yards; by the middle of January following he could go some yards without a stick; a month or so later he was able to go up and down stairs, and soon after was sent to the asylum at Walton, from whence he returned after a month's stay.

March 18.—Able to walk three or four miles. The bowels and bladder acting naturally. In fact almost perfectly recovered. The perchloride caused a good deal of irritation of the bowels at first, and the dose was reduced to gr. $\frac{1}{32}$; after some time it was given in combination with tr. ferri muriat. Towards the end of the treatment Faradisation was employed with some advantage. The muscular tremor which had been so marked during the existence of the paralysis completely disappeared as motor power was regained. At the time of his discharge the sensibility of the lower limbs appeared natural.

The chief interest of the above history appears to me to lie in its bearing upon some of the results of railway accidents. Much difficulty is felt by some in believing that serious disease can gradually supervene after the lapse of several weeks as the result of a concussion, which produced no immediately apparent injury. The desire of obtaining a large pecuniary compensation from the company is regarded as the real motive for more or less conscious exaggeration, or simulation, of disease. It cannot be denied that such suspicions are justifiable, and that fairness to the accused party requires that in all such instances a searching scrutiny should be made. I feel nevertheless quite satisfied that those are in the right who affirm that a concussion which produces but little apparent damage at the time and for a varying period afterwards may set up an insidiously advancing inflammation of the spinal cord, which may issue in irreparable mischief. Cases have been recorded where no conceivable motive existed for simulation, where hysteria was out of the question, in which the sufferers passed through a tedious and painful illness to more or less perfect recovery, or died and gave evidence on dissection of the presence of serious lesions. The evidence adduced by Mr. Erichsen especially cannot, I think, be set aside. The above case adds something to its weight,

as the patient had clearly no motive for, and showed no tendency to, malingering. Among my notes I find mention made of another instance very much of the same kind. A gentleman of mid-age, while consulting me respecting attacks of giddiness attended with circular movement, stated that ten years before he had been paralysed in his lower limbs in consequence of a fall from a carriage; he was not palsied at first, but took long walks which brought on very severe pain in the back. Nevertheless he continued to walk until at last paralysis set in. He was kept for eighteen months in the recumbent position, and had issues made in the back, by which means he recovered pretty well. My notes do not specially state that this was not a case of railway accident, but I am almost positive that it was not, and that it adds another item of proof of the damage which may result from neglect of suitable precautions in cases of this kind.

The chief remark which I have to make relative to the case of W. W. is that the success obtained after myelitis had existed so many months should encourage us not to despond even in very unpromising conditions. Certainly we cannot be too prompt in endeavouring to arrest myelitis; 'nimia diligentia' in this case is a fault on the right side. The delicate structure of the cord if once injured is with great difficulty repaired, especially if the patient be of weakly organisation. Probably my patient's recovery was materially promoted by the circumstance that he was a healthy countryman. The violent tremor of the semiparalysed extensors when he attempted to move his lower limbs was very remarkable. That it depended upon a lesion of the nervous centre there can be no doubt, but in what respect that lesion differed from the paralysing one cannot be definitely stated. This only seems pretty certain, that it was of the same kind though less complete. The same treatment availed for the removal of the tremor and of the paralysis, and the former disappeared before the latter. Tremor and spasm have certainly marked affinities with paralysis, just as hyperæsthesia has with anæsthesia. This is the practical point, and I doubt whether we could direct treatment any better if the microscope had revealed to us the exact condition of the altered nerve-tissue.

XXVIII.—*Cardiac Hypertrophy of obscure origin; question as to the existence of Renal disease; remarkable effect of Digitalis.* By C. HANDFIELD JONES, M.B. *Read May* 22, 1868.

E. P., female, æt. 54, admitted January 18, 1868. Has been subject to rheumatism for years, but has never had rheumatic fever. About four months ago was attacked with palpitation of the heart and pain in the right side or flank. Has been laid up in bed during the last three months; had 'screaming convulsions' during the first three weeks of the last month, depending, it would seem, on severe dyspnœa. Her legs swell at times, are notably anasarcous at present, the œdema being rather firm. Is emaciated a good deal. Appetite indifferent. Breathing quick, orthopnœal; has much dyspnœa at night, which prevents her getting much sleep. Pulse very weak and irregular.

Dullness area of heart increased, the apex beat is felt outside the vertical line of the left nipple, the rhythm is irregular, the sounds are free from murmur, but the first is much assimilated to the second. Dullness to some extent at the right posterior base, less at corresponding left, breathing deficient in lower right back. Right hypochondrium is tender. Urine clear, in fair quantity, not albuminous. The case was regarded as one of hypertrophy with dilatation, with probably degeneration of the muscular tissue of the heart. Strychnia with iron was given ter. die, and at night a combination of spt. æth. s. co., liq. opii sedat., and tr. cannabis Indic. She improved under these means, with moderate stimulation for a short while, but soon relapsed. Every now and then she had attacks of quasi angina pectoris, marked by violent pain at the precordia, after which her breath got much worse and she felt pain. The orthopnœa was relieved by brandy. About February 13, erysipelas of the face appeared, the pulse became extremely weak, the lungs more congested, the expectoration blood-stained. Two days previously, I had ordered bark and ammonia, but the first dose made her extremely sick, and I returned to the strychnia in larger doses—gr. $\frac{1}{16}$ ter die, which she took for four days. On February 16, she was in extreme suffering, moaning and complaining of burning pain like fire in her body; she thought mortification must have taken place. Her hands were cold, and of a dull red, and I could feel absolutely no

pulse at the wrist. I thought she was dying. The strychnia was left off, and tr. digitalis ♏ x. + spt. æth. chlor ♏ x. + aq. ℥ss. was ordered to be taken 2dis horis. She took four doses that day, and after a pause resumed it the following, 3tiis vel 4tis horis. On the 17th, her pulse was distinct; on the 18th it was as good as it had been at any time during her stay in the Hospital, and both her hands were quite fully warm; the urine was red, thick with lithates, and scarcely if at all albuminous; the legs highly anasarcous. Herpes labialis was very marked. On 20th, my report is: Eats her meals well, hands warm, had some sleep in night, good breathing in left back, much weaker breathing in right with some dry noises. She was taking port wine 12 oz. and brandy 2 oz.

On 22nd, the pulse was 75, intermittent and irregular; the anasarca was gone from the legs or nearly so; there was some bloody and muco-purulent expectoration, and some sickness or nausea. The urine was of deep red colour, sp. gr. 1014, not albuminous. I omitted the digitalis. On 23rd, she was better, felt better; took her food well. On 24th, about 8 A.M. she died very suddenly, having had no digitalis for forty-one hours.

At the autopsy, the heart was found more hypertrophied and less dilated than had been anticipated. The right ventricle was not at all enlarged, did not reach as far as the apex, which was formed solely by the hypertrophied left ventricle. The walls of this cavity were thick, of a dead leaf colour, rather flaccid. On microscopic examination the muscular fibres did not appear to be notably altered, the transverse striæ and nuclei were commonly apparent, but many of the fibres contained long streaks of oily-looking molecules, evidently the remnants of the disintegrated nuclei. The weight of the heart was 16 oz. The valves were efficient, but the attached flap of the mitral was thickened and pouched, as in process of forming an aneurism. The heart lay transversly, its apex outside the vertical line of the nipple in the fifth intercostal space. The right auriculo-ventricular orifice was very wide, the right auricle a good deal dilated. Both lungs were congested and œdematous; in the lower lobe of the right there was a large block of pulmonary apoplexy. The kidneys were very large; the weight of the two together was 19 oz.; their structure was dense and crisp. The cortical tubes were not at all broken up, but were obscurely seen until solution of carbonate of soda was added; their epithelium was very

abundant and rather fatty, their canal tolerably wide. The Malpighian tufts were tolerably normal. The medullary tubes were distinct, but rather infarcted with granular epithelium, and contained in some places series of short homogeneous oval casts. The matrix was perhaps somewhat thickened. The liver was long; the right lobe descended far down in the abdomen, and this probably was the explanation of a tumor which a doctress had discovered in the lower right region. The uterus and ovaries were natural.

I have recorded this case for the sake of its bearing upon the action of digitalis. The patient was pulseless and to all appearance moribund one day: the drug was given; the next day she had a distinct pulse, the day following a warm hand, and for several succeeding days she improved so much, losing her dropsy and having less dyspnœal distress, that I began to entertain hopes of her recovery. Nearly two days after the digitalis is left off she dies suddenly. It can hardly be thought that the strychnia was acting injuriously and that her improvement was owing to its omission, for she had taken the larger doses during, at least, three days without apparent ill effect, and doses less by about one-third had been administered for some time with benefit. I do not doubt myself that her life was prolonged for a week by the digitalis, and I think if I had persevered with it she would have had a better chance of recovery.

Such a case as this corroborates the evidence which is now, I think, considerable, that digitalis is really appropriate to conditions of enfeeblement of the heart, where there is no danger of over-stimulus. When it is used to depress the heart's action, the procedure seems to me something like stupefying or dulling the brain with an excessive amount of alcohol. In both cases a moderate quantity excites, an excessive paralyses. The first action is invigorating, the second toxic.

That the heart was hypertrophied is evident; that its power was greatly enfeebled is equally so. I fully expected to have found an adequate explanation of the latter circumstance in the state of the muscular tissue, but failed. It is possible that a more complete examination of the whole organ might have discovered a greater amount of change. The portion, however, which I took seemed to be a fair specimen of the rest. Considering the evidently neurotic character of the dyspnœal aggravations, and the attacks of quasi angina pectoris, it does not seem to me improbable

that the cardiac nervous centres were much at fault; that, in fact, the innervation of the organ was more defective than its contractility. I cannot think that the scrutiny of a case of this kind is complete, unless it includes an examination of the cardiac and the related sympathetic ganglia. The cause of the hypertrophy is obscure. It was evidently not dependent on valvular disease. Rather it appeared as if there existed some hindrance to the free flow of the blood in the systemic vessels, which the heart had to contend against, and in doing so became hypertrophied. The evidence afforded by the urine during life, took me off altogether from any suspicion that the cardiac alteration might be of renal origin, but the result of the dissection leads me to reconsider the matter. The kidneys were certainly much enlarged, their epithelium appeared over-abundant and some tubes were obstructed by it, while others contained objects resembling casts. Their condition, on the whole, corresponds pretty closely with Dr. G. Johnson's description of the organs in non-desquamative nephritis; and despite the constant absence of albumen from the urine, and the tolerably healthy appearance of the secretion, I entertain much doubt whether imperfect depuration of the blood was not the primary derangement. The accumulation of a large amount of epithelium in the tubes of the kidney does not seem to me to imply by any means increased activity of the secreting process, but rather the reverse. The function of this layer of cell substance is to deliquesce as it were into the various matters which go to make up the urinary solids, and if it ceases to undergo this normal change, and either accumulates in the tubes or is detached and thrown off in the urine, the secretory process is arrested. In the thyroidal cavities one may not unfrequently observe (as I long ago pointed out) an inverse relation between the quantity of lining epithelium and of contained secretion. The history appears to me suggestive of doubt, whether our ordinary methods of examining urine are sufficiently accurate. The retention of some ill-defined substance in the blood may interfere more with its capacity of circulating freely than the loss of a moderate amount of albumen.

XXIX.—*Case of Motor Asynergy.* By Edward Headlam Greenhow, M.D. *Read May* 22, 1868.

R. A., brewer's labourer, aged 45, has been an out-patient at the Middlesex Hospital, under my care, since April 1865. During that period he has been three or four times in the hospital for a few weeks, and has just been readmitted into Pepys ward.*

The case is a well-marked one of its kind, and I bring it under the notice of the Society in order to its investigation by a committee, should it be thought desirable to appoint one to report upon it.

Previous History.—Patient is married, and has had seven children. Has always been of temperate habits. Nearly all his father's family suffered from rheumatism, but otherwise his relatives on both sides have been healthy. He had small-pox severely in childhood. At the age of 20 years he fell off a scaffold from a height of twenty feet, and was much bruised about the body, besides receiving a severe wound in the right arm; but no bones were broken, nor did he suffer any injury either to the head or spine. At the age of 22 years he had syphilis, which, however, was not followed by any secondary symptoms. A year later he broke the right tibia and left fibula. With these exceptions, patient had enjoyed good health, until about eight years before coming under my care, when, to use his own expression, his 'legs began to fail, and felt as though a heavy weight were hanging to them.' This sensation had recurred at intervals up to the time of his admission, and with so vivid a sense of reality that he often looked to his feet to ascertain whether there were not something attached to them. About the same time, he first experienced a feeling of numbness and also acute, but transient, pains in various parts of his trunk and extremities. He gradually became worse, and had been several times under medical treatment before presenting himself at the hospital.

State on Admission.—Patient complained of weakness and numbness both in hands and feet, and of flying pains in various parts of the body. He suffered much from hæmorrhoids, which, whenever they were touched, caused sharp, shooting pains, especially down the left leg. He walked in

* This case appears as No. IV. in the paper on Locomotor Ataxy, in 'St. George's Hospital Reports,' vol. i., by Mr. Lockhart Clarke, who saw the patient on one occasion with me, and took notes of the case with my permission.

an unsteady, tottering manner, with his eyes fixed on the ground. He could not stand with his feet placed close together, nor with his eyes shut, nor on one leg even with his eyes open. Notwithstanding his unsteady gait, and his feeling of weakness in the limbs, he could walk long distances, such as ten or twelve miles, without fatigue, and was in the habit of constantly moving about at his work during as many as fourteen hours daily. His muscles were well developed, and it did not appear that there could be much loss of muscular power in the lower limbs, for even a strong man was unable to bend or straighten his legs when he resisted; there was, however, some deficiency of grasping power in the hands. His movements were more feeble and unsteady when first starting to walk than after he had advanced a few paces in a straight line; but any attempt to deviate from a straightforward direction, or more especially to turn round, brought on increased unsteadiness of gait. He could not walk at all in the dark without assistance, but either by day or by night very slight support, such as being held by one finger, enabled him to walk steadily. Sometimes, whilst he was walking, one or both of his legs suddenly seemed to lose power and gave way under him, so that unless he could lay hold of something he fell to the ground. This occurred most frequently with the right leg, which was also apt to twist round in walking, so as sometimes to become entangled with the left one and almost throw him down. He was easily knocked off his balance, and had been several times actually thrown down in the streets by the flapping of a lady's dress round his legs as she passed him. Even when sitting he was unsteady, unless supported against something, and if he shut his eyes he felt as though the chair were slipping away from under him.

Careful notes of this case were taken from the day of the patient's coming under observation, and the following description of the symptoms comprises a digest of my notes during the earlier weeks of his attendance at the hospital in 1865.

Patient's sense of touch was much impaired. His hands were usually so numb that he had difficulty in buttoning his clothes; but the numbness varied in degree from time to time, and was sometimes so great that he could scarcely retain his hold of anything, or pick up a pin or other small object from the table. He often could not distinguish a hot surface from a cold one, nor tell the nature of articles in his pockets until he saw them. The right hand was worse in these

respects than the left. His feet were also more or less numb; he had little sensation in the soles, and often could not feel the ground when walking, except with his heels; at other times, he said, it even seemed to him as if he were walking on his 'stumps,' or ankle-bones. When pricked with a pin on the instep or lower part of the legs, he was scarcely conscious of the pain at the moment, but felt it distinctly a few seconds afterwards. He had often a sense of tightness in the limbs, as if they were firmly bandaged, and he had for some time, more or less persistently, a similar feeling round the abdomen, and at times also round the margin of the ribs. He also frequently experienced formication in the fingers and thighs. The muscles of the extremities, on being Faradised, reacted perfectly as regarded motion, but the sensor reaction was dulled.

The patient was slightly deaf in the right ear, and considerably more so in the left. His ears were examined by Mr. Hinton, who said that the appearance of the membranes was normal in both ears, and the Eustachian tubes were pervious. The deafness was, in Mr. Hinton's opinion, due to impairment of nervous power, with perhaps slight obstruction to the passage of sound on the left side. The sense of sight was also impaired, but not to any serious extent. Both eyes were slightly prominent. The right eye was weak and became easily fatigued if he attempted to read, and his sight was often somewhat dim. Mr. Hulke examined his eyes with the ophthalmoscope, and found the optic nerves slightly atrophied. When he first came under my care, he had double vision with regard to distant objects; for instance, on several occasions he saw the windows on the opposite side of the hospital quadrangle double. He had about the same time slight inward strabismus of the left eye. The pupils were both contracted, but the left one was smaller than the right. For some time the extract of belladonna, given internally, to the amount of a grain three times a day, had comparatively little effect in dilating them; but at a later period, when the sight had improved and the pupils were less contracted, it dilated them fully.

He possessed full control over the rectum, and had ample warning previous to defæcation, but the control over the bladder was less perfect. He could generally micturate freely in the morning, when the bladder was fully distended, but had more or less difficulty later in the day. After free micturition the urine often continued to dribble, and sometimes

even began to pass again in a full stream when he believed the bladder to have been emptied. On these occasions he was not always conscious of the passage of the urine, unless he saw it, and it also often passed involuntarily when he coughed. Sometimes, on the other hand, he could only pass water with difficulty, and was obliged to strain. When this was the case, he experienced a feeling of numbness in the perinæum, creeping upwards and affecting the right hand, the front of the neck, and the right side of the face. Occasionally, also, the act of straining produced rigors. On account of these latter circumstances, he was carefully examined by Mr. Hulke, who found the urethra free from stricture, and could detect no stone in the bladder. The urine was frequently examined, and found to be free both from albumen and sugar, and perfectly normal in character. It was feebly acid, and varied in specific gravity from 1012 to 1020.

From the beginning of his illness, the patient suffered from the transient pains incidental to his complaint. These were, as usual, chiefly, though by no means exclusively, seated in the extremities, but they prevailed in a much greater number of seats than is common in such cases. He frequently experienced pains shooting through the head, sometimes from the forehead backwards; at others, from the occiput forwards, and again at other times across from ear to ear. These pains were only momentary, but often recurred after brief intervals, and were said by the patient to be of similar character to the pains in the extremities. At other times he had similar pains, beginning in the cardiac region, or epigastrium, and spreading round the margin of the ribs, which were, he said, attended by dyspnœa.

In the upper extremities the pains occurred mostly in the ulnar borders of the hands and fore-arms, and, upon the whole, affected the right hand and arm more frequently and severely than the left. Sometimes they were restricted to a small area, such as the space between the wrist and the metacarpo-phalangeal joint of the little finger, or the phalanges of two or more adjoining fingers. At other times the patient said that they shot upwards or downwards, 'like lightning,' between the palm and the elbow, for the time completely destroying all power in the hand, so that he dropped anything he had hold of. He described the pains at different times as of a smarting, pricking, or shooting character, and as coming on so suddenly and severely as to make him start; a fact occasionally witnessed whilst he was

under examination. Increased numbness and loss of power in the hands were always experienced coincidently with the pains, and frequently also perverted sensation. Thus, at one time he would have the feeling of heat, and at another of cold, in the affected part; and at such times any object which touched him conveyed an impression of heat or cold rather than of contact.

In the lower limbs the pains prevailed much more frequently than in the arms and hands. The separate pains were of very brief duration, but they came on in paroxysms, which lasted from four or five to twenty-four or thirty-six hours, returning again and again in the same seat, after intervals of only a few minutes, for hours together, and then perhaps suddenly shifting to some other seat, as from a lower to an upper limb, or to the corresponding part of the opposite limb, or to another part of the same limb. The intervals between these paroxysms of pain varied in duration from a few days to several weeks, and the paroxysms often supervened without any apparent exciting cause; although certain meteorological changes, such as a storm or the setting in of an east wind, undoubtedly seemed to influence their accessions, and the patient himself said that he could foretell such changes of weather by his feelings some hours beforehand. The only other cause which seemed to have any direct influence on the accession of the paroxysms was over-fatigue, the pain having on many occasions set in at night after some unusual exertion during the day. As in the upper extremities, the pains differed in extent at different times; being sometimes confined to one or more toes, or to the instep of one or other foot, or even to a point on the inside of one of the thighs, and at other times shooting along the limb upwards or downwards. Thus, pain beginning in the plantar surface of the little toe would shoot into the calf and extend upwards to the knee or thigh; and, again, pain beginning in the thigh would shoot downwards to the knee, instep, or toes.

The pains also differed in character in different seats. In the feet the patient compared them to the pain of a severe crush; in the toes they felt as if the nails were being dragged off, or the toes were being forcibly pulled away from the feet; but sometimes, he said, they more resembled the gnawing of animals than anything else. When the pains were in the knees it seemed to him as if the patella were being knocked off, and in the shins as if the bone were being splintered. In the calves and thighs the pains were generally of a lancinating

racter, as if a sharp instrument had been suddenly plunged o the flesh; but sometimes they felt rather as if the flesh re being severely pinched. In places where he had forrly received injuries, and especially in the cicatrix of an wound in the right hand, the pains were of a smarting racter and so precisely like the sensation of a recent wound, t the patient often instinctively looked to see how he had rt himself. There was no tenderness to touch in the parts ected by the pains, neither could any tender point or other normal condition be discovered in the spine, which was eral times examined by Mr. Shaw and Mr. Hulke, as well by myself.

Progress of the Case.—The patient's condition has undergone le change during the three years he has been under treatnt. His sight has improved, and the pupils are no longer ntracted; but the unsteady gait, the numbness, and pains, nain much as at first. His general health and his appetite ve remained good throughout, and he has gained fully half stone in weight.

Treatment.—This patient, like several others who have been der my care, has appeared to derive temporary benefit from e nitrate of silver combined with extract of belladonna. He s also latterly appeared to improve somewhat under the use a pill consisting of extract of belladonna and ergot twice day, and moderate doses of the bromide of potassium three nes a day.

Report on Dr. Greenhow's *case of Motor Asynergy (Locomotor Ataxy). Read May* 22, 1868.

R. A., aged 48, brewer's labourer, muscular system well deloped; little or no fat. Weighs 10 stone for 5 feet 6 inches height, and has not varied, he says, for the last two or ree months. Brown hair, red beard, green-grey eyes; arcely any grey hair. Face seared with small-pox scars ncurred at four years of age). Does not look older than is years. Skin generally very fine, but the palms, and espeially that of the right hand, very horny. On the head of etatarsal bone of little toe, left foot, he has a bursa which ow and then gets inflamed and suppurates, and at present s covered by much thickened and horny epidermis. Mind lear, intellectual powers not great, memory impaired. Pulse egular, but weak.

Second sound of heart perhaps slightly accentuated.

Appetite fairly good; digests well; tongue clean and

moist. Bowels have been confined at times, but now are rather loose in consequence, probably, of the medicine which he is taking—Pulv. ergotæ gr. iij., extr. belladonnæ gr. ¼ in pil. o. noct.; a mixture of bromide of potassium with sp. ammon. aromat. and infusion of gentian. It very often happens that the action of the bowels is accompanied by vomiting of food. He is conscious of the evacuation, and never now passes fæces involuntarily, though this used to happen three or four years ago. Always knows when he wants to pass urine, but does not always know when he has left off: he cannot tell without looking whether the urine is still passing. It never happens that he is unable to pass urine, but he can never check himself in the act of passing it. The urine has sometimes 'started' before he could get out of bed, but he has never wetted his bed unconsciously.

Virility almost lost. For the last three years has scarcely had any sexual desire, and erectile power is now almost absent. On the very rare occasions of intercourse, he has not been conscious of emission, and the act has been followed by giddiness in the head and throbbing up the spine. About two years ago he had very frequent nocturnal emissions, with great desire to urinate immediately afterwards.

Spinal column shows no deviation.

Percussion gives no pain in any part.

Is accustomed to sweat very much at night.

Cranial nerves.—Sense of smell and of taste unimpaired. Sight is good, but the left eye weaker than the right. When examined ophthalmoscopically by Mr. Hulke, nothing abnormal was perceived. Motor power of globes perfect. No strabismus or ptosis. No diplopia. Pupils rather small and not very sensitive, but quite equal and regular. Conjunctivæ slightly injected. No trigeminal pain or conscious numbness. Sensibility to pricking good throughout the distribution of the fifth, except in the tongue, where it is somewhat defective. Hearing decidedly impaired; the loud ticking of a watch cannot be heard, even when nearly touching either ear. No impairment of the remaining cranial nerves.

Pains and subjective Sensations.—He has now, and has had for about eleven years past, a sensation of a heavy weight about the feet, and weakness both in the legs and feet. These sensations are not constant, but occur at intervals. He will sometimes pass a week or two (but never longer) without feeling them, or they may occur daily. Any exertion, such

as fast walking or running, will always produce them. He believes the weakness is most felt in wet weather. Besides these sensations he has pains, which for the last five years have affected his body generally, but never his head. Latterly his legs, thighs, and arms, rather than his trunk, have been attacked by them. He describes them as resembling 'flashes of lightning,' 'lances flying through him,' or 'big splinters running into him.' Sometimes they begin at the toes, and go gradually up the foot, feeling as though something was pulling at it. The pains seem to him to be under the skin, not in the bone. They often begin like a prick with a sharp needle and gradually spread, accompanied by a feeling as though the muscles were being drawn up. They are not, however, he says, contracted. The pains are often so violent as to cause his limbs to 'jump.' Sometimes there is a sensation of heat 'like a flat piece of iron being poked under the skin.' At other times, it is as though a piece of ice were thrust in. This sensation of extreme cold is, on the whole, most frequent in the thick of one or other thigh, and he has often stood close before the fire, and rubbed and squeezed his muscles to get rid of it. In this he has succeeded, but the sensation would return when he left off. The sensation of cold as of heat is entirely subjective. The attacks of pain are very irregular. They will affect him for from a few hours to two or three days with constant suffering. They will rarely pass off in a few minutes, but much more commonly last for several hours or days. They are peculiarly apt to shift suddenly to quite a distant part of the body. He may have gone a fortnight, he thinks, during the last five years without feeling the pains, but certainly not longer. After a severe attack of pain, there is great local tenderness, so that the touch of the bedclothes is painful to him, on account of the 'soreness.' He does not feel this soreness unless he is touched, or unless he uses the muscles of the part.

The pains occur quite indifferently, day or night, and under every variety of circumstances. He thinks, however, that change of weather is apt to produce them (?). He has noticed, too, that they are prone to occur after enquiry has been made about them. Bodily fatigue and mental anxiety do not apparently influence them. He does not remember to have noted any necessary connection between the pains and the sensation of weight previously described. The latter would not be worse when he was being distressed by the former. He thinks that perhaps he has felt the sensation of

weight most when lying in bed. Under these circumstances, on getting out of bed in the night, he cannot tell whether he is on his feet or not. He is obliged to strike a light, or he could not stand. There is frequently 'numbness' and 'tingling' in the legs. Now and then he notices a feeling across the belly, just below the ribs, as though he were leaning against a sharp edge.

General sensibility.—Examination was instituted on this point in reference to (1) touch, (2) pain, (3) temperature, and (4) the passage of the induced electric current.

1. *Tactile.*—A hair drawn over the skin was felt perfectly on the face, less perfectly on the trunk, imperfectly on the arms and on the dorsal aspect of the hands, not at all on the palmar surface of the hands and fingers, except along the inner border of the thumbs where it can be readily perceived. A blunt point pressed upon the finger pulps is only perceived after the lapse of two or three seconds. This diminution of tactile sensibility is much more marked in both right extremities than in the left. This difference especially applies to the hands. A small key is singled out of a bunch very readily by the left forefinger and thumb, but with the corresponding fingers of the right hand this is managed very clumsily and after considerable delay. He told us that he had often taken his knife out of his trousers pocket and applied it to the keyhole of his street door, fancying that it was his latch-key.

2. *Sensibility to pain.*—The prick of a pin is felt very slightly in both legs and thighs. Both fore-arms and hands are very insensitive to the same application. He told us that twelve months ago his left big toe was much damaged by an accident, and the nail torn off, but he did not discover this for several hours.

3. *Temperature.* — (*a*) Heat is well perceived generally, except on the palms where the skin is too thick. There is also slight deficiency of perception on the dorsum of right foot. (*b*) Cold.—Both fore-arms, but the right especially, are insensitive to ice. Both legs and feet are defective also in this respect, but the right more so than the left. The front of each thigh is sensitive to ice, and equally; the dorsum of both feet especially the right, very defective.

4. *Electro-muscular sensibility.*—This is generally very good, except upon the dorsum of the right foot, where it is very imperfect, improving steadily as the leg is ascended, so that the thigh is perfect. On the dorsum of the left foot

also it is not quite perfect, but far less impaired than on the right side.

Deep sensibility.—Very imperfect in the lower extremities, and in the right fore-arm and hand. Many a time, he says, when getting up from sitting he has tumbled down, owing to his having been quite wrong in his notion as to the position of his feet. He cannot pick up anything with his right hand unless aided by his eyesight.

Electro- and reflex motility.—Tested by the induced current (Middlesex Hospital battery, one galvanic cell, Smee), electro-motility is found to be good everywhere. Reflex motility is apparently also normal.

Muscular power.—When recumbent or seated he can readily flex, extend, or rotate his lower extremities, and these movements cannot be prevented by an observer using very great force. The grasp of the left hand is perhaps a trifle better than that of the right. Neither is quite so powerful as the ordinary grasp of a labouring man. He says that he was formerly a very strong man, that he used to carry very heavy weights (300 lbs.), and he thinks that this practice has had to do with his illness. For more than three years past he has found himself unable to carry great weights; latterly even $\frac{1}{4}$ cwt. has been unbearable.

Power of executing combined muscular movements. — He dresses himself rather slowly but without much difficulty, lacing his boots for himself. Buttoning his trousers he effects with his left hand, the right being nearly incapable of executing this little operation.

He cannot stand for a minute with his feet together unless he looks at them or is assisted by some support. A single finger, however, gently laid upon a bystander's arm is quite sufficient, and with this small amount of help he can even lift one foot from the ground and remain standing on the other. He walks upon his heels, with legs wide apart, and requires to look at his feet. If he shuts his eyes or looks up he can scarcely avoid falling. The legs are not lifted very high or much jerked. After a few steps one foot is very apt to twist behind the other and endanger his stability. This, he says, has often thrown him down. Before admission he was very easily tired, even in going 200 or 300 yards. It seemed, he says, as though he was walking on his 'stumps,' by which he means his leg-bones. Seated on a bench he has great difficulty in keeping his body upright,

there being a strong tendency to sway from one side to the other.

Comments.—This case appears to us to be a fair example of the disease to which the term locomotor ataxy is ordinarily applied. In no very striking particulars does it differ from the class of cases thus denominated; but there are one or two points worth noticing. Thus, although this patient's gait is truly ataxic, there is little of that wild flinging about of the feet and stamping of the heels which is so often observed. The insensitiveness to cold shown by the extremities is a very rare feature in cases of this kind; and in this instance it is strongly marked. In this patient, as in another under Dr. Greenhow's care, upon which one of us has reported, both sight and hearing are affected; unlike the latter, however, there is here no impairment of smell or taste.

The effects of moral influences upon this patient are worth noting. His pains, he tells us, are apt to come on soon after his attention has been directed to them by questions upon the point. It was found also, as we have noted, that a finger laid upon a bystander was sufficient to conquer nearly all the difficulty experienced in standing or walking without assistance. The very slightest pressure was all that was thus exerted upon another person, and it is impossible to explain the help thus afforded on physical grounds alone. It is evident that to the confidence thus created its influence is very largely due.

As a favourable point of prognosis in the case of this patient, it may be noted that the progress of his disease has been very slow, the symptoms having commenced so long as eleven years ago. He was still, up to the time of his admission into hospital in April, able to do work, and he will probably return to it. His condition indeed now is, in some respects, more favourable than it was some three or four years ago, when he was compelled to give up work for several months. During this time the action of the rectum was so much implicated that he could not check evacuation for an instant—a difficulty which is no longer observed.

F. E. Anstie.
T. Buzzard.

XXX.—*Two cases of Lesion of the cervical portion of the Spinal Marrow, exhibiting the phenomena of heat-stroke.* By HERMANN WEBER, M.D. *Read May* 22, 1868.

AS a supplement to a former communication to the Society on 'cases of rheumatic fever, with rapid death from the nerve centres, accompanied by excessive ante-mortem rise of temperature,' I venture to give a short account of two cases of lesion of the cervical portion of the spinal marrow with a similar rise of temperature, and great analogy in the ante- and post-mortem appearances.

CASE I.

Summary.—Injury to the neck with at first only transitory loss of consciousness, excessive micturition and diarrhœa, contraction of pupils, rapid rise of temperature, and development of intense pyrexia, with coma; death eight hours after injury, with a temperature of 111·2° F. (44° C.). Post-mortem examination: Fracture and dislocation of third, fourth, and fifth cervical vertebræ; considerable laceration of the corresponding portion of the spinal marrow; softness and moistness of the brain; intense congestion of the lungs; fluidity of the blood in the diastolic heart; ecchymotic spots under pericardium and endocardium.

B. T., a youth, aged 19, while at work in a crouching position, was struck on the neck by a large stone falling from a considerable height; he was immediately raised and found to be insensible, but after a few minutes he vomited, recognised those around him, and expressed his wish to be taken to the German Hospital, where he was placed under the late Dr. Straube's care (1852). I saw him twenty minutes after the accident; he could walk when supported on both sides, but walked like a perfectly drunken man when supported only on one side; could move his arms; complained in a rather indistinct voice of pain in the neck, shoulders and arms, and of giddiness and heaviness in the head. The pupils were equal and of natural size. Pulse 72, regular. There was no external wound. The treatment consisted in rest in an almost horizontal position, and the application of ice to the neck.

Immediately after having been put to bed he passed urine, and continued to do so every fifteen or twenty minutes; the quantity thus passed was very great. The urine was of

medium specific gravity (1018 to 1020), neutral, free from sugar and albumen, and deposited phosphates on being boiled. He was exceedingly thirsty.

An hour after admission the pulse had risen to 90, the breathing was more rapid, the face flushed, both pupils contracted, he spoke more indistinctly and hurriedly, but was conscious; the skin rather hot; temperature in axilla 100·4° F. (38° C.). Two and a half hours after the accident he was restless, muttering indistinctly, endeavouring to leave the bed; had had several motions (passed unconsciously), the first being solid, the others fluid mixed with blood and mucus; face flushed; pupils quite contracted and motionless; occasional convulsive twitches in the arms and legs; pulse 110, very distinct and sharp; breathing rapid; skin slightly moist and also hot, but not in proportion to the temperature shown by the thermometer in the axilla which was 109·58° F. (43·1° C.).

Four and a half hours after the accident there was complete coma, the limbs motionless, no reflex movements could be excited; pupils less narrow, but quite uninfluenced by light; face livid; skin moist; temperature in axilla 111° F. (43·9° C.); pulse 140, sharp and distinct; respiration hurried but irregular, with occasional pauses, which latter gradually became more frequent and prolonged until death occurred eight hours after the accident; the pupils having been towards the end of medium size, but immovable, the temperature in the axilla 111·2° F. (44° C.) a few minutes before death.

The post-mortem examination, performed eighteen hours after death, showed fracture and incomplete dislocation of the third, fourth, and fifth cervical vertebræ; the corresponding portion of the spinal marrow was considerably injured, especially the posterior half, which was transformed into a dark red pulp. The medulla oblongata and brain were congested, soft, and moist, the arachnoid rather opaque. The heart in the state of diastole; the right ventricle distended by dark, almost fluid blood; there were numerous hæmorrhagic spots underneath the endocardium and pericardium. The lungs were intensely congested, especially the lower lobes, the bronchi being likewise congested, and containing sanguinolent mucus. The spleen was larger than usual, evidently from fresh congestion; the section of dark red colour, the substance not softened.

Case II.

Summary.—Injury to the neck; at first no perfect loss of consciousness or of motion; afterwards coma with development of intense pyrexia; death nineteen hours after the accident. *Post-mortem.*—Fracture and dislocation of the third and fourth cervical vetebræ, lesion of the corresponding portion of the spinal marrow; brain soft; intense congestion of the lungs; heart distended with fluid blood; minute ecchymotic patches on its surface.

G. P., aged 23, was admitted into the German Hospital as one of Mr. De Méric's patients, a few minutes after a fall from a cart, in consequence of which one of the wheels had passed over his neck. On his arrival at 4.40 P.M., he was seen by Dr. Burger, one of the resident medical officers, to whom I am indebted for this report. He was then not quite unconscious, could speak, and could also move his limbs when assisted. The pupils were dilated and almost uninfluenced by light. Pulse 68; the first sound of the heart over the region of the aortic valves was replaced by a bellows murmur. He did not know how the accident had occurred, but said that he was well in the morning.

On the following day, at 6.30 A.M., about fourteen hours after the accident, he was unconscious, the pupils were of medium size, the respiration stertorous and irregular; pulse 100, regular; several motions were passed into the bed; the skin was moist and hot.

At 9.30 A.M., immediately after death, and seventeen hours after the accident, the temperature in the rectum was 110° F. (43·34° C.); a quarter of an hour later 109·8° F. (43·22° C.).

Post-mortem examination.—Fracture and partial dislocation of the third and fourth cervical vertebræ; the corresponding portion of the spinal marrow much crushed, and almost transformed into a red pulp; the spinal marrow below the injury appeared normal, that between the seat of injury and the medulla oblongata, as well as the latter and the brain itself, were much congested and rather soft, especially the brain; the arachnoid of the brain was opaque. The microscopic examination did not yield any further elucidation; there were no granular corpuscles either at the seat of the injury or above or below it; the nerve-fibres in the crushed portion were of course much torn, and the fragments intimately mixed with oil and blood-globules. The lungs were excessively congested, the left more so than the right, and there was

some œdema of both lungs. The heart was in the state of diastole, the right ventricle much distended with dark, almost fluid blood; numerous minute extravasations of blood were seen beneath the endocardial and pericardial lining; the aortic valves were much diseased by thickening, partial ossification, and fibrous deposits, leading to stenosis and insufficiency.

These cases corroborate the experience of Sir Benjamin Brodie,* Billroth,† and other observers, that certain injuries to the cervical portion of the spinal marrow lead to a rapid increase of animal heat; they show also that this increase of heat is accompanied by the development of other phenomena of intense pyrexia, viz., increased frequency of pulse and respiration, and excessive thirst; and that other symptoms referable to the nervous system, as constant desire to pass urine and a tendency to diarrhœa, are synchronous with, or rather precede the development of the intense pyrexia. Whether any injuries of other parts of the nerve centres, the brain, the medulla oblongata, the dorsal and lumbar portion of the spinal marrow, have a similar effect, has not yet been sufficiently enquired into; in the limited number of cases which have come under my own observation this was not the case. It is, however, very desirable that every opportunity to settle this question should be used, as also the further point whether injuries to any part of the cervical portion produce the effects, or only those to a more limited region. Accurate observations on this subject may bring us nearer to the settlement of the locality of the as yet hypothetical centres for the regulation of temperature and chemical processes in general. Tscheschechin,‡ from his experiments on animals, is inclined to place these centres in that portion of the encephalon which is anterior to the junction between the pons and the rest of the medulla oblongata. Cases like those related render it at first sight more probable that in man at least the seat of the regulating centres lies in the cervical portion of the spinal marrow; yet it is quite possible that these lesions influence first the brain and cause the symptoms in question only through this. The remarkable rise of temperature and the

* Pathological and Surgical Observations relating to injuries of the Spinal Cord. By Sir Benjamin C. Brodie, Bart., F.R.S. 'Medico-Chir. Trans.' vol. xx. pp. 118–164, 1837.

† Beobachtungsstudien über Wundfieber und accidentelle Wundkrankheiten. Von Dr. Th. Billroth. 'Archiv für klin. Chirurgie,' vol. ii. p. 482. 1862.

‡ Zur Lehre von der thierischen Wärme. Von Dr. J. Tscheschechin. 'Archiv für Anatom., Physiol. und wissenschaftliche Med.' 1866, p. 151.

other phenomena of pyrexia, were at all events in both cases preceded by the impairment or abolition of the psychical functions of the brain.

The fact taught by these cases, that the most intense pyrexia can be developed by lesion of certain portions of the nerve centres alone, without the previous existence of any morbid poison or any other change in the blood, is in favour of the view that the phenomena of fever or pyrexia are referable to nerve influence, that they are in fact nerve symptoms, and that the blood changes inseparable from fever are to a great degree affected by an altered nerve action, even in those processes where the admixture of a poison to the blood is the first link in the chain of morbid conditions.

The great analogy in the symptoms during life and in the post-mortem appearances between these cases and cases of heat-stroke, as described by Longmore,* Maclean,† and others, and also the cases of rapid death from rheumatic fever and other diseases accompanied by excessive ante-mortem rise of temperature, leads us to the inference that the vital condition of the nerve centres is the same in all of them, and if it were allowed to use hypothetical expressions, we would designate this condition as paralysis of certain portions of the nerve centres, and especially of the regulating centre or centres of the chemical processes. The observations before us are already sufficient to show that this paralysis may be produced in various ways, as by exhaustion, owing to continued overstraining of the regulatory apparatuses of temperature in protracted exposure to high temperature under unfavorable circumstances (ordinary heat-stroke), or in acute diseases accompanied by high degrees of pyrexia, by pain, by sleeplessness, convulsions (acute rheumatism, tetanus, &c.), by mechanical injury to certain parts of the nerve centres, as in the cases just related; and it is not improbable that severe shock to the nervous system alone, mechanical or psychical, may under peculiar circumstances suffice to produce the same effect.

* 'Lancet' 1859, vol. i. p. 315.
† Reynolds's 'System of Medicine,' vol. ii. 1868.

XXXI.—*Case illustrating the condition of the Circulation in Bright's Disease.* By J. BURDON SANDERSON, M.D. *Read May* 22, 1868.

REBECCA G., a married woman, aged 51, was admitted into Middlesex Hospital, March 27, 1868, under the care of Dr. H. Thompson, with whose permission the following facts are communicated.

Antecedents.—The patient is the mother of ten children, three of whom died in infancy, the others being now in good health. At thirteen she had scarlatina, and at twenty was an in-patient of Middlesex Hospital with hæmoptysis. She states that she was several months under treatment. She has been subject to winter cough with expectoration for many years. She had suffered from dyspnœa and vertigo for a month when she applied for admission.

State on Admission.—Pulse 88, respirations 24. Integument uniformly pale, dry, lustreless, and entirely wanting in elasticity. Face and hands slightly œdematous. Odour characteristic. Tongue furred and brown in centre; appetite wanting; bowels open. On auscultation, the heart sounds were found to be normal. Rhonchus and sibilus heard everywhere; percussion resonance normal. Expectoration frothy, and in small quantities. Urine acid, sp. gr. 1017, smoky, yielding a precipitate of albumen so abundant as to occupy half the volume of the liquid.

Muscular pains complained of in all parts of the body, particularly in the calves. No complaint of pain in loins.

April 2.—Pulse 88, respirations 32. Complains of dyspnœa, giddiness, and dimness of vision. Otherwise in the same state. Ordered to be cupped to ℥iij. This was followed by immediate but very transitory relief, and in the evening the dyspnœa returned with greater violence than before. She was ordered a stimulant antispasmodic mixture, and 3 oz. of gin daily.

5.—Pulse 116, small and weak. Urine sp. gr. 1011, loaded with albumen. To be dry cupped.

7.—No urine passed all day. In the evening 10 oz. were withdrawn by catheter, having a sp. gr. of 1029 and intensely albuminous. Pulse as before. Ordered ten grains of acetate of potass three times a day, and to be again dry cupped.

9.—Pulse 112, small and weak. Dry cupping repeated.

10.—Œdema of right hand and right ankle increased. Urine appears as if it solidified when boiled, from the enormous quantity of albumen; sp. gr. 1023.

11.—Pulse 92, small and weak.

13.—Œdema still increasing. Urine as before; sp. gr. 1015. Dry cupping to be repeated. Loud rhonchi heard everywhere on auscultation.

14.—Visited the patient with Dr. Stewart, who remarked on the smallness of the pulse.

17.—Pulse 96.

26.—Œdema decreasing; pulse 88.

May 2.—Urine as before; sp. gr. 1015.

4.—Wandering in the night. Pain diminished, and œdema decreasing. Ordered 4 oz. of best port, and 4 oz. of gin.

10.—Respirations 22. Rhonchus with sibilus heard everywhere. Respiratory modus that of exhaustion. Expiratory act sudden, and often accompanied by a groan. A rough systolic bruit resembling friction is heard at the fifth cartilage, to the left of the sternum. The cardiac dullness is certainly not increased; for some days the patient has wandered during the night.

12.—Patient in the same state as before; was very restless and noisy during the night.

Having become violent and abusive, she was removed, on May 16, to the delirium ward. She was in a restless and excited state for the three following days, after which she became quiet and apparently unconscious.

19.—Pulse 92; respirations 20.

20.—Has been sinking since yesterday. Pulse as before; respirations 22, stertorous in expiration, with prolonged pause; pupils variable, not sensibly affected by light.*

Commentary.—The point in this case to which I desire to draw the attention of the Society is the condition of the circulation, not as being exceptional, but rather as being so constant as to be characteristic of Bright's Disease.

Throughout the case it was observed that the radial pulse was singularly small and weak. This fact was recorded in the notes repeatedly and verified by several very accurate observers. Indeed the pulse was so small as to be often almost imperceptible.

* She died two days afterwards, i.e. on the same evening that the narrative of the case was communicated to the Society.

Now, in Bright's Disease the pulse is as a rule remarkably hard, not only in the chronic stage but in the acute condition, when the malady is approaching its fatal issue; for, as Dr. Bright taught a long time ago, the disease affects the circulation through the systemic capillaries in such a degree that an increased energy of the heart is required to force the blood through them. The hardness of the pulse is, in fact, the inevitable result of the increased work done by the left ventricle.

As to the reason why this is the case, we know that there are two theories: one that of Professor Traube, who holds that the reason of the over-exertion is that the existence of uroid products in the blood is a stimulus to the left heart, and causes it to contract with greater vigour; the other, that so admirably argued by Dr. G. Johnson, according to which it depends on thickening of the capillary arteries. At all events there is no dispute as to the fact that in Bright's Disease the left heart has more work to do, and consequently that the pulse ought to be always hard.

How, then, is such a case as the one before us to be explained? In the same way that all other apparent anomalies are to be explained, viz., by better observation; and for this purpose an instrument of precision affords valuable aid. Just as the learned doctors of whom Charles II. asked how it happened that a fish was heavier after it was dead than before, solved the question by weighing it and finding that it was not so; so here you must weigh the pulse before you can be sure of its real condition. If you do so, you find that the notion of softness is a mistake, and that the arterial expansion is not only hard, but that its hardness is in some sense the reason why it feels so small to the finger.

In the case of Rebecca G., sphygmographic observations were taken at different periods, the results of which are given in the tracings figs. 1–4. When the sphygmograph was so graduated that the pressure exerted by the spring on the artery was less than 200 grammes, the movement of the lever was of small extent. When, however, it was increased to 400 or 450 grammes, it became much greater, the effect being in each observation in proportion to the pressure. In the natural condition of the circulation, the result of the experiment would have been the reverse; that is to say, the arterial movement would have been almost suppressed under a pressure of 450 grammes, but would have gradually increased as the pressure was diminished to 200 grammes.

There was, however, a marked difference between these results and those obtained afterwards when the patient was in a moribund condition. To the finger the pulse appeared much stronger and fuller than before, the arterial movement was obviously much increased, and the artery seemed to beat with greater force than at any previous period. But the sphygmograph showed that its resistance to compression was impaired; for the strong pressure which before was indispensable to the demonstration of its movements, was now found to suppress its pulsation altogether, as will be readily understood by the comparison of figs. 1 and 2 with figs. 3 and 4.

Fig. 1. Observation made May 10 (pressure of spring = 450 grammes).

Fig. 2. Observation made at the same time (pressure of spring = 200 grammes).

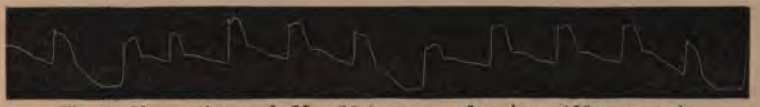

Fig. 3. Observation made May 20 (pressure of spring = 450 grammes).

Fig. 4. Observation made May 20 (pressure of spring = 200 grammes).*

Addendum.

The following notes are abridged from the Report by Dr. Cayley of the post-mortem examination which was made May 23, i.e. the day following that on which the case was communicated.

External appearances (nineteen hours after death).—Surface of body pale; lower limbs œdematous; obesity excessive.

Head.—A recent blood-clot, about one inch and a quarter in diameter and a quarter of an inch thick, is attached to

* The depressions of the tracing observed at intervals of five or six pulsations in figs. 3 and 4 are due to inspirations.

the under surface of the dura mater, covering the left posterior cerebral lobe. The mass is strictly circumscribed, and can be readily separated from the dura mater. The surface of the brain corresponding to it is not depressed, and the arachnoid and pia mater are healthy. On microscopical examination, the extravasated blood is found to occupy the meshes of delicate connective tissue, by the bands of which the coagulum is intersected. A few hæmatoidin crystals are visible. The brain is moderately firm, but anæmic. The arteries at the base are atheromatous. The ventricles contain clear serous fluid in considerable quantity.

Thorax.—The right pleura contains ℥xxij. the left ℥x. of clear serous fluid. The right lung is carnified at the base, and both are œdematous and congested. The bronchial tubes are filled with frothy mucus, and their mucous membrane reddened. Patches of rough granular lymph occur on both pericardial surfaces, the pericardial cavity containing ℥j. of turbid flaky fluid. The heart weighs fifteen ounces. The wall of the left ventricle measures from 4‴ to 8‴ in thickness; its cavity is dilated. Its muscular tissue appears to the naked eye flabby and pale; on microscopical examination, the muscular bundles are found to be granular and studded with minute oil globules, the striæ being, however, distinguishable. There are delicate filamentous vegetations attached to the edges of the aortic valves, which, however, are competent. The other valves are healthy. The aorta is not atheromatous.

Abdomen.—The peritonæal cavity contains about a pint of serous fluid. The liver is rather small, but of natural appearance. The kidneys weigh 8¼ oz. each. The capsules are easily stripped off, leaving a smooth surface studded with a few small cysts. The arborescent veins are much dilated. On section, the cortex is found to be increased in breadth, and of a yellow fatty appearance, while the pyramids are dark and hyperæmic. The right ureter, pelvis, and calices are somewhat dilated, the mucous membrane being rough and granular; the left ureter is normal.

The principal structural alterations observed by Dr. Cayley in the cortical substance of the kidney were impletion of the convoluted tubes with oil globules and dark granular matter and thickening of the afferent arteries and Malpighian capsules as well as of the interstiti[illegible] [illegible]sue generally.

The bladder contained puru[illegible] and its mucous membrane was reddened and disc[illegible] [illegible]here we[illegible] [illegible]er lesions of importance.

XXXII.—*Description of an Operation for cleft Palate.* By George W. Callender. *Read May* 22, 1868.

J. L., æt. 14, was sent to St. Bartholomew's to be operated on for a cleft palate. The fissure extended through the posterior part, and notched for a short distance the horizontal plates of the palate bones. On February 11, I divided the levator palati on either side, and five days later, viz. on the 16th, the wounds having nearly healed, but the muscles remaining actionless, I passed four wires through the sides of the fissure, and the palate being held forward and steadied by means of the wires, I proceeded to pare the margins, and subsequently brought them together by twisting the sutures. In this operation I did not attempt to close the fissure in its anterior third, but left the gap between the palate bones to contract of itself, or, if necessary, for a future operation. During these proceedings the girl was under the influence of chloroform.

The edges of the wound united without an unfavourable symptom.

Remarks.—I desire to draw attention to the plan of dividing the levatores palati by a separate operation not requiring the use of chloroform. The advantages which result from so doing are these: 1. There is no trouble at the later operation from hæmorrhage; there is scarcely any bleeding from the passing of the wires or from the paring of the edges; there is consequently an escape from troubles, such as coughing or vomiting, which sometimes follow the passage of blood into the trachea or stomach. 2. The supply of blood to the edges of the cleft is not interfered with, for, in the interval of five days between the operations, time has been given for the local circulation to right itself. Subsequent experience has confirmed my belief, that no inflammatory action worth noticing is excited by the division of the muscles, none certainly which in any way hinders the after-union of the edges of the cleft. 3. The healing of the wounds after the first operation is an index of the reparative power; if they fail to repair readily, the evidence is so far unfavourable for proceeding further until the patient's health is mended. 4. The muscles by a separate operation can be divided more effectually than at the beginning or close of the ordinary operation. If practised at the beginning, there is the trouble

and hindrance caused by the considerable bleeding; if at the close of the operation it is not easy to be certain that the muscles, weary and indisposed to action after much handling of the parts, are effectually divided.

No one who takes the trouble to examine a soft palate, and who has noticed the manner in which a number of stray fibres, outside the bulk of the levator, are found extending along its entire length, can feel but that it is impossible to divide all these. By cutting freely from a point about three lines from the anterior extremity of the edge of the fissure in the soft palate obliquely downwards and outwards towards the tonsil, a cut nearly an inch long in an adult, and by carrying the knife completely through the soft palate from before backwards the chief muscular bundles can, however, be effectually cut across. It is not, as a rule, necessary to divide the fibres of the palato-pharyngeus. After the first operation all the muscles of the palate are passive, and the velum hangs inactive.

XXXIII.—*A Case of Fibroid Phthisis.* By Andrew Clark, M.D. *Read February* 14, 1868.

SUMMARY.—A woman, twenty-eight years of age, four years married, but childless, sprung from healthy parents, said to have been temperate and to have enjoyed good health till three years before, when she had ascites, from which she recovered in eleven months, began, in July 1867, to suffer from vomiting, prostration, cough, occasional hæmoptysis, muco-purulent expectoration, albuminuria, œdema of extremities, and occasional diarrhœa, and, becoming rapidly worse, died comatose on December 5 of the same year. A post-mortem examination revealed, as had been predicted during life, fibroid disease of left lung with dilated bronchi, cheesy deposits and cavities resulting from their disintegration, enlargement (and waxy degeneration*) of liver; granular contraction (and slight waxy degeneration) of kidneys; ulceration of the bowels, enlargement of the mesenteric glands, fibroid degenerations of, or deposits in, other organs and tissues.

* The facts within parentheses were not made out at the time of examination.

Mary Sutherland, æt. 28, married four years but childless, was admitted into the London Hospital, under the care of Dr. Andrew Clark, on November 21, 1867.

Patient states that she enjoyed good health till three years ago, when she was rather suddenly seized with ascites, for which she was treated in the London Hospital by Dr. Fraser; that she recovered in about eleven months; that she remained in tolerable health and certainly without any definite complaint till the close of July in the present year, when she was attacked with frequent vomiting followed by rapid loss of flesh and strength, harassing cough, attacks of hæmoptysis, muco-purulent expectoration, sleeplessness, and occasional diarrhœa; and that these symptoms have continued with greater or less severity to the time of admission.

On the 24th, the patient was visited by Dr. Andrew Clark, who, with the assistance of Dr. Eustace Smith, Mr. G. W. Mackenzie, and Mr. J. M'Carthy, made as minute an examination as her strength would permit. The chief parts of the following account and all the points of diagnosis were dictated at the time.

Patient, who is greatly emaciated, reclines on her back, wears a look of great exhaustion, and takes little notice of surrounding objects. The features are pinched, the eyelids drooping, the pupils dilated and sluggish. She is drowsy, but sleepless; utters occasional short moans; complains of being moved, and replies to questions with some difficulty, but still, as it seems, with accuracy.

The skin is of a dusky yellowish-white colour, dry, rough and furfuraceous. Here and there are whitish patches where the skin seems denser and thinner than elsewhere. The hair is scanty, dark, and coarse. The fingers are clubbed. In the axilla the temperature is 97·4° F.

Lower teeth almost all gone. Upper teeth and lips covered with sordes. Tongue denuded of epithelium, red, dry, cracked, shining, and protruded with difficulty. Urgent thirst. Frequent vomiting, aggravated by the introduction of food. Much belching of wind. Pain around the umbilicus increased by pressure. Abdomen yields no evidence of the presence of fluid. Bowels relaxed and relaxation preceded by griping pains. The hepatic dullness in the line of the right nipple extends two and a half inches below the free margins of the ribs; from thence the line of dullness runs obliquely upwards into the cardiac region where it is incapable of definition.

Urine, forty-five ounces in last twenty-four hours, pale, acid, and of the specific gravity of 1014. It contains a tenth of its bulk of albumen and deposits on standing a whitish cloudy sediment. By microscopic examination this is seen to consist of scaly epithelium, spheroidal epithelium, pus globules chiefly in masses, blood discs, and considerable quantities of granular matter. A second examination revealed the presence of a very few small hyaline tube casts. Patient has slight leucorrhœa. She menstruated naturally two months ago.

On account of patient's weakness only the front and lateral parts of chest were examined.

Respirations twenty in the minute and calm though chiefly abdominal.

Examination of left side.—From second to fifth rib and from the sternum to the front of axillary region the chest wall is unevenly depressed and moves but slightly on inspiration. In the supra-clavicular region percussion is somewhat tympanitic; the breath-sounds are blowing; vocal resonance is bronchophonic and occasionally doubled as from echo. From the second to the fifth rib and from the left border of the sternum outwards and downwards into the axillary region there is marked dullness increasing in hardness and resistance from before backwards. In the fore part of this region the inspiratory sounds are of a blowing bronchial character and accompanied by moist subcrepitant râles; expiration, however, is not sensibly prolonged and not accompanied by crepitation. In the axillary part of this dull region the breath sounds are distinctly tubular and sniffling, though in some degree masked by moist crackling and coarse crepitation. Vocal resonance is for the most part bronchophonic and broken. At two spots, however, closely adjacent about the middle of the axillary region, the breathing is cavernous and the voice pectoriloquous. Here, too, a double metallic click is heard simultaneously with the heart's contractions. Throughout the outer and lower half of this dull space moreover there is heard at times a faint creaking leather sound, and the vocal fremitus is notably diminished. Over all the inferior part of this lung the inspiratory murmur is harsh, and the expiration, which in its first half is blowing, terminates only after apparent cessation of movements of thoracic walls in a few gentle puffs. Here, too, an exquisitely fine, dry, crumpling crepitation is developed in the course of forced inspiration. Vocal resonance and fremitus are both

diminished.* Percussion over the anterior third of right lung tympanitic; elsewhere normal. Inspiratory murmur in front harsh and divided; expiration everywhere prolonged and accompanied by sibilant rhonchi. Vocal vibration increased. Occasional crepitation is heard over the root of the lung behind; but from a variety of reasons it is supposed to be conducted. Patient has no trouble in breathing. Cough, though not frequent, occurs in violent and fruitless paroxysms which end in vomiting. Expectoration occurs after a succession of fits of cough and then rather suddenly and in considerable quantity at a time. It seems mucopurulent and not lumpy or discrete. It is most abundant and sometimes fœtid in the morning, but does not exceed half a pint in the twenty-four hours. Microscopic examination reveals the presence of broken bands and areolæ of elastic tissue (disintegration of bronchial and alveolar walls). The chief constituents are pus globules with which are associated granule and pigment cells, blood discs, and much granular detritus.

Limits of cardiac dullness cannot be accurately defined. Apex of heart is seen and felt to beat against the upper border of fourth rib, a little outside and below the nipple, which is unusually high. In the upper part of second intercostal space, better than an inch and a half from the left border of the sternum, there is visible a pulsatile movement apparently synchronous with the ventricular contraction. At apex heart's sounds though feeble are normal. At cartilage of second left rib a low pitched systolic murmur is heard which can be followed a little way upwards and outwards, but not downwards nor to the right side. It is variously modified by alterations of position and increased in pitch by a deep inspiration. Pulse 74, small and compressible. In a few places are signs of arterial degenerations.

Patient has no headache. Occasionally she experiences sensations of numbness or faintness in the limbs followed by tremblings. Hearing and sight somewhat defective: a very few white spots in the choroid. Lies with attention introverted, making frequent moans. When questioned she answers intelligently, though not very intelligibly, and complains of cough, thirst, vomiting, recurring abdominal spasms and great exhaustion. Is very drowsy, but has not slept well for several nights.

* Ultimately in this region there arose uniform dullness, tubular breathing, and bronchophony.

On concluding the examination, Dr. Andrew Clark expressed his conviction that the case was one of a constitutional character which had lately localised itself in an especial manner in the left lung; that the product of the constitutional disease was of a fibroid nature, and that it was probably due to syphilis or alcohol, or both together. Although the cough, hæmoptysis, diarrhœa, and the various physical signs of lung deposit above noticed, suggested the idea of an engrafted pulmonary tuberculosis, for which indeed the patient was admitted, Dr. Clark declared his belief that no such disease existed; that the case was not one of tubercular scrofulous or pneumonic phthisis, or of pulmonary cancer; but that it was one of fibroid phthisis, complicated with enlargement of liver, granular kidneys, ulcerations of the bowels, and fibroid degenerations of various organs and tissues.

Patient was ordered to have milk with ice and beef-tea jelly alternately in small quantities at short intervals; to have, instead of wine ordered on admission, small quantities of brandy, and to take an effervescing citrate of ammonia draught with two grains of iodide of potassium every four hours. A blister was applied to the epigastrium, and afterwards moist heat round the whole body.

Nov. 25.—Patient passed a restless night, feels no better, but seems weaker.

Mouth rather moister. Vomits frequently. Bowels confined. Pulse 78. Resp. 22. M. T. 94·4° F.; E. T. 98·2° F. In other respects the same.

Hot poultices were applied round the chest. Hydrocyanic acid and morphia replaced the citrate of ammonia mixture. Brandy was ordered to be taken in soda water.

27.—Weaker since last report. Tongue moister, takes a little food and retains some of it. Bowels still confined, and abdomen painful. Urine abundant and acid; sp. gr. 1018; one-tenth bulk of albumen; a few hyaline casts. Cough very troublesome. Little sleep. Pulse 80, feeble. Resp. 23. Skin moist at parts. M. T. 98·8° F.; E. T. 97·4° F. Feet œdematous.

To have fifteen grains of compound jalap powder at night, and to use the linctus glycerinæ for the relief of cough.

29.—Tongue moist, but red and fissured; less thirst and vomiting. Bowels relieved. Urine less abundant. Cough troublesome at intervals. Expectoration less. Had a restless night, but patient nevertheless expresses herself better. Pulse 84, very small. Resp. 24. M. T. 100·1° F.; E. T. 98·2° F.

Dec. 1.—Much worse since last report. Tongue dry; great

thirst; recurrence of vomiting. Bowels relaxed. Urine less abundant, alkaline and more albuminous. Paroxysmal attacks of cough without expectoration. Has painful sensations of breathlessness, chest oppression, and sinking. Cold sweats about the hands, feet, and face. Œdema extending. Great restlessness. Pulse 90, small and irregular. Resp. 26. M. T. 99·2° F.; E. T. 97° F.

Half an ounce of brandy mixture every hour. Chlorate of potash lemonade. ℞ Spts. chloroformi ♏xv., spts. am. ar. ♏ xx., liq. morphiæ hyd. ♏ vii.ss., aq. camph. ℥i., q. quarta hora.

2.—Had a better night through means of half a grain of opium. Is obviously, however, much weaker. Takes no food. Vomiting has ceased. No movement of bowel. Urine alkaline and albuminous. Cough less; loud moist râles over both lungs in front. Breathing calm, but somewhat irregular. Complains of oppression of chest. Skin clammy. Patient takes little notice, but still answers correctly when questioned. Pulse 92. Resp. 20. E. T. 96·2° F.

3.—Patient became comatose during the night, and died this forenoon.

Post-mortem Examination.—Dec. 4, at 4 P.M., the general examination was made by Dr. Hughlings Jackson, and the microscopic one by Dr. Andrew Clark; but for the following account of both the latter is alone responsible.

Head not examined.

Thorax.—Heart small and drawn upwards to the left side. Pericardium adherent to left lung, which at the point where it overlapped the origin of the vessels was indurated. Cardiac valves and orifices healthy. Right lung of large volume; anterior and inferior margins pale, dry, and emphysematous. Bronchial mucous membrane, where examined, thick, soft, red, and coated with a viscid bloody mucus. Interlobular areolar tissue everywhere healthy. No deposit in any part of lung. Left lung universally and firmly adherent to the pericardium, ribs, and diaphragm. When removed it was seen that upon the surface corresponding to the first and last of these parts the adventitious lymph formed a thick white dense membrane, which sent septa inwards through the lung. Over the surface corresponding to the ribs the lymph was thinner, softer, speckled with capillary blood extravasations, and evidently of recent origin. The lung was irregular in form and diminished in bulk. It measured barely six and a half inches from apex to base. Taken into the hand it felt

about its middle like a hard, dense, but elastic fibrous growth. A section having been made through the lung from summit to base, the following appearances were presented: From the root of the lung, which was embedded in dense fibroid tissue, whitish ramifying septa shot outwards to the circumference, traversing every part of the lung but the apex, which, except at one point where there was a subpleural nodule,* was quite healthy. In addition to these septa, which followed the course of the bronchi and bloodvessels, there were other septa intersecting and occupying the place of the interlobular tissue and organically connected with the thickened pleura. The portions of lung lying between these fibrous bands were variously altered. Commonly the imprisoned lung was hard, dense, resistant, and of a greenish slate colour. At certain other parts the lung exhibited rounded cheesy lumps, a few as small as peas, the majority as large as hazel-nuts. The smaller ones occupied the centres of lobules, and the larger ones were for the most part accurately limited by the interlobular tissue. Some of the latter had broken up into small rounded cavities. From the root of the lung there passed diagonally outwards to the circumference a chain of oval communicating cavities each rather larger than a Spanish nut. So free was the communication, that the whole chain looked like one elongated cavity partially intersected by shallow partitions. These cavities were lined with cheesy matter and contained some curdy pus streaked with blood. On close examination it seemed as if the cavity nearest the root of the lung had originally arisen from a dilated bronchus. Three rather thick septa traversed the lower third of the lung horizontally. Between the first and second were several small rounded communicating cavities; between the second and third the lung was simply grey, solid, and tough. At the pleural extremity of the third was a cavity about the size and shape of a very small walnut. Below the third septum and at the anterior free margin of the organ were numerous cheesy deposits accurately filling the lobules which were all isolated and distinctly mapped out by apparently unaffected interlobular tissue.†

The walls of the pulmonary artery were distinctly thickened as far as they could be followed with the naked eye, and the

* This nodule was merely a mass of fibrous tissue about the size of a pea.

† This had exactly the appearance, as may still be seen in the preparation in my possession, of what is called cheesy, scrofulous, and by me epithelial pneumonia.—A. C.

thickening was plainly due to some change in the outer coat of the bloodvessel. All the horizontal septa were formed by tough, white, pervious or impervious bloodvessels. The walls of the bronchial tubes were also thickened, and here and there slightly dilated; but there were no such marked and general dilatations as are sometimes met with in common cirrhosis. Some of the bronchi terminated in seeming continuity with cavities. The mucous membrane was generally thick and vascular: at a few places in the larger tubes it was ulcerated and villous. There was everywhere marked prominence of the longitudinal elastic bands and transverse muscles. No grey granulation was anywhere to be found in this lung. Bronchial glands enlarged: two of them contained cheesy deposits.

Abdomen.—The liver weighed 6 lbs. 7 oz. Capsule healthy. Parenchyma pale, dense, very friable, and exhibiting all the appearances of waxy (amyloid) degeneration. The surface of a section, which had a faintly nutmeg appearance, exhibited reddish brown spots on being brushed with the iodine solution, but no violet colour was developed by it and sulphuric acid together. Bile pale, watery, and abundant. Spleen weighed 11½ oz., and was also waxy. Capsule thickened by layers of old lymph. Both kidneys small, granular, and contracted. The granulations, however, were larger and paler than is common in the ordinary cirrhotic kidney. When laid open, the cut surfaces had a faintly waxen appearance, and developed a few reddish brown spots on the application of iodine. Numerous deposits and ulcerations in the lower part of the ileum. The deposits were seated in the submucous tissue, more or less spherical, and in size varied from the magnitude of a pin's head to that of a pea. The larger ones when pricked gave out a semifluid matter like curdy pus. Some of them had ruptured naturally, and exhibited the appearance of minute excavated ulcers with thickened margins. The other ulcers were oval, and lay across the long axis of the gut. They had granular everted borders, shallow vascular bases, studded with minute cup-like depressions. The peritoneum over them was intensely vascular, and coated with films of soft lymph. Here and there over the ulcers were thin circular patches, looking exactly as if drops of melted wax had fallen upon the membrane and then solidified. Mesenteric glands enlarged, but apparently not otherwise altered.

Summary of Microscopic Examination.—Bronchial glands. Close examination of sections of the non-cheesy glands re-

vealed the presence of minute semitransparent sclerous spots or tracts. When portions of these parts were submitted to microscopic examination, and compared with other portions of parts apparently healthy, the only recognisable difference between them was the presence in the former of an amorphous substance, which, by its accurate adaptation to and limitation by the alveoli, suggested the notion that it had been produced in a liquid form and had afterwards solidified. At all events, the most careful analysis revealed no new structural form which might possibly have been considered as the agent of its production. At one or two points where the sclerous substance occupied several adjacent alveoli, there was the faintest appearance of fibrillation, but none of distinct fibres. The cheesy matter occupying one or two of the glands consisted of granular matter, free nuclei, and disintegrating cells. The gland substance surrounding this matter was full of large cells, obviously multiplying by nuclear proliferation and extrusion.

Lungs.—The finer horizontal septa were found to consist of obliterated bloodvessels or bronchi, the structural elements of which had undergone various degrees of retrogressive metamorphosis. In these, as well as in the still pervious vessels and tubes, the areolar tissue coat was more or less thickened. The intersecting fibrous bands occupying the interlobular fissures as well as the bands shooting inwards from the thickened pleura, consisted of a true areolar tissue, which appeared to have grown by a process of differentiation, and not at all by any mere process of cell development. The elastic elements appeared to have sprung from the nuclei, and the inelastic, or white, either from the direct solidification of a fluid exudation, or from the differentiation of already existing fibres. Certainly no other spindle-shaped or fusiform cells were found except those which obviously came from the walls of the bronchi or bloodvessels.

The portions of lung more immediately embraced by these septa were in one of four conditions. They were either emphysematous, or congested, or had a dense slate-coloured fibroid aspect, or contained cheesy deposits.

The emphysematous portions of lung were simply atrophied. The alveoli contained no cells; there was no trace of spherical or oval nuclei, no indication of bloodvessel, and the alveolar wall appeared to consist only of a homogeneous riddled membrane, traversed by a few fibres. The bloodvessels leading to such portions were invariably found to be obliterated.

In the congested parts the alveoli contained numerous epithelial and pus-like cells, with some granular matter and blood discs.

In the dense slate-coloured fibroid-looking parts the alveoli were accurately filled by what seemed at first sight to be a perfectly amorphous substance, having only here and there the slightest appearance of fibrillation. And in many cases no manipulation and no reagent brought to light any structural form in the midst of this amorphous substance. Nevertheless, in the majority of cases, dilute solutions of acetic acid or of potash revealed the presence of epithelial or pus-like cells in one or several regular or irregular layers lying against the alveolar walls. But it was worthy of notice that these cell-forms were only such as were found where there was no sclerosis and only slight congestion.

It now became evident from repeated comparative examinations that three distinct morbid processes had been going on in the lungs: one, the spread of a true areolar tissue from the pleura, the interlobular fissures, the bronchi, and the blood-vessels; the second, the production of a fluid which infiltrated the textures and clotted into amorphous moulds of the alveoli; and the third, a simple fibroid withering or degeneration of the normal textures. Wherever true fibrous tissue was found in any part of the lung substance, it could be traced back to bloodvessel, or bronchus, or interlobular fissure. Though the alveoli therefore were invaded from without, there was no independent production of fibrous tissue within them; the sclerous change which some of them exhibited was due to the presence of an amorphous substance arising in a different manner, and only occasionally exhibiting traces of fibrillation. Lastly, it was noticed that wherever the sclerous change was most complete, the circular nuclei, which in health stud the alveolar walls, were either broken up into granules, or altogether absent.

The smaller cheesy deposits occupying the centres of lobules were composed of flattened epithelial-like cells with a few blood discs, particles like the white corpuscles of the blood, and some granular matter. The larger masses, involving whole lobules and extending over several adjacent ones, had a somewhat different constitution, owing probably to greater age or quicker development. Speaking in general terms, the centre parts of each consisted almost entirely of a granular detritus. Around this ran a zone of débris studded with nuclear-like particles and cellular shreds. Still more externally

lay heaps of disintegrating nucleated cells. The circumference was crowded with similar bodies, swollen and variously distorted—some having many nuclei, others numerous vacuoles—all evidently in a condition of active proliferation and decay. Scarcely a granule cell was to be seen, and but very little free fat. Of course the structural elements were not arranged in such precise order at all parts as may appear from this description. The description is, nevertheless, drawn from nature, and substantially accurate. To the naked eye the consolidations just described had exactly the characters of what is still described in, unhappily, the majority of our schools and books as 'cheesy tubercular infiltration.' But the microscope showed very plainly that they possessed the exact structural characters of what the author has called epithelial or scrofulous, and the chief foreign schools, quite incorrectly, a cheesy pneumonia. Quite incorrectly, because it is now beyond question that both the leading types of pneumonic exudation, the simple acute (corpusculo-fibrinous, according to the author)* and the catarrhal or cheesy (epithelial in the writer's arrangement), are alike liable in certain conditions to undergo the cheesy metamorphosis. To designate one pathological condition by a quality possessed, though less frequently manifested, by another, is a plain and unallowable violation of the proprieties of a scientific terminology.

If the word tubercle is to signify anything definite in opposition to everything indefinite—if it is to be employed in a rigorous method as an instrument of progress in opposition to the loose and shifty manner of the schoolmen in their controversies about prevenient grace, as a mere means of successful logomachy, and thereby the cause of endless perplexity and confusion—the consolidations above described cannot be called tubercular. They are the results either of a vesicular and lobular epithelial (cheesy) pneumonia or of a simple scrofulous process akin to that which, independently of obvious inflammation, issues in the stuffing of an organ or texture with large spheroidal nucleated quickly-growing and prematurely-decaying cells. Happily the main object of the present communication renders it unnecessary to determine to which of these pathological processes the consolidations in question are to be referred. Moreover, such a discussion could be successfully conducted only upon an occasion when the

* 'Lectures delivered at the Royal College of Physicians,' 1866.

point at issue formed the chief subject, and not an incidental topic of interest.

Liver.—In sections of the liver it was seen that the textures were pervaded by some amorphous substance, and that the nuclei of the capillary walls were greatly multiplied, rather smaller than normal, and spindle-shaped instead of oval. One territory of liver cells was pale, nebulous, and waxy; another dark, granular, and fatty. The former became reddish brown, the latter light yellow, on the application of iodine. In several trials the vessels remained quite unaffected by this reagent. The ordinary arrangement of cells in a lobule was broken through. Instead of being disposed in cylindrical rays diverging from a centre, and connected by transverse bars, the cells, in the waxy parts, were huddled together in apparently confused and shapeless heaps.

Kidneys.—A homogeneous, and here and there fibroid substance, much in excess of what any system of shrivelled capillaries could form, surrounded the tubes in the cortex. The capillaries were studded with oat-shaped nuclei. The tubes here contracted and there dilated, or almost cystiform, contained at some points granular matter, and at others what seemed to be hyaline cylinders. Some of the Malpighian capsules were accurately filled by a nebulous or waxy substance, which suggested the idea of its origin by means of the exudation of a fluid which had suddenly solidified. Scattered spots throughout the whole organ became reddish brown on the application of iodine; but between the parts that were, and those that were not, affected by this reagent, no structural difference could be detected.

* * * * * * *

Remarks.—It cannot be doubted that of late years considerable advances have been made in most departments of the science and art of medicine. But in one—in that which relates to the pathology and treatment of lung diseases—it does seem that, notwithstanding much movement, there has been little progress. For, if we proceed to consider the character of the change born of often-recurring and yet seldom-varying conflicts of opinion, by comparing the knowledge of these days with the knowledge current in the times of Baglivi and Avenbrugger the judgment naturally growing out of the comparison is that the change, certainly not in most things for the better, is probably in the main for the worse.

There are two chief reasons for this—the one pathological, the other clinical.

The pathological reason is that men at the outset of their enquiries adopting the provisional formula of Laennec get infatuated by its simplicity and persist in declaring it to be absolute. 'Every cheesy lump is a tubercle. Tubercle is a new growth resulting always from a special constitutional vice, and never from a neglected cold—an unabsorbed pneumonic deposit or a fibroid invasion of the lung. Pulmonary phthisis is simply the suppurative disintegration of the tubercular deposit. However different may seem the anatomical changes effecting and accompanying the destruction of the lung in this disease—grey lumps or yellow—circumscribed or diffused—acute or chronic—fibrous or tubercular—pneumonic or hæmorrhagic—they are all but varieties the one of the other. The modes of expression may be many; the essence is but one. For other organs there are, it is admitted, various agents of destruction: for the lung, however, there is practically none but tubercle.'

Much that is plausible can be urged in support of these views; and it requires rare freedom from traditionary influences, much careful observation, and the closest thought to become completely convinced of their fallacy. When, however, we learn that the cheesy state is but a common stage in the downward history of the most diverse things—not of tubercle alone, but of mucus and pus and lymph and blood—we are bound to reject as false the dogma that every cheesy lump is a tubercle and every cheesy mass a tubercular infiltration. When, furthermore, we discover in the bodies of persons dying of what is conventionally called consumption pathological states of lung of a constitutional as well as of a local character, different in their mode of origin, in their structure, disposition, effects, progress, and issues, we are justified in believing that phthisis is not one but manifold. It is true, in fact, as Bayle said speculatively of old: 'Phthisis is a genus including several species.' The generic term comprehends all progressive consolidations and circumscribed suppurative disintegrations of the lung: the specific term should indicate by a distinctive adjunct the different states concurring to this end. For surely if the progressive consolidation and suppurative destruction of lung constituting phthisis be determined in one instance by tubercles, in another by pneumonic exudations, in a third by scrofulous growths, and in a fourth by fibrous invasions, and if these things be in any sense different from one another, common sense demands that their differences should be permanently

recorded by distinctive designations. Hence it is both convenient and correct to speak of tubercular, scrofulous, pneumonic, fibrous, and bronchial phthisis.

There is also a clinical reason for the present unsatisfactory condition of our knowledge and treatment of pulmonary affections. The symptoms indicating their presence have a closer dependence upon mere damage to the function of the lung than upon the varying nature of the pathological process effecting it. There are therefore of necessity striking resemblances between the clinical characters of all lung diseases. But there are likewise radical differences; and if one's perceptions were not blunted by long familiarity and biassed by preconceived opinion, one might arrange these differences into natural groups and discover for each an independent centre of pathological change. That under the guise of pulmonary phthisis are hid diverse affections of the lungs is a truth now, as we have seen, beyond the reach of doubt; and so to set forth in a definite manner the assemblage of symptoms by which these affections are severally to be distinguished during life, has become the prime desideratum in the pathology of lung diseases. For until this is done, the results of clinical enquiry must continue radically corrupt, the conclusions drawn from therapeutic experiment delusive, and our management of the phthisical state, at all times uncertain, often mischievous.

It is plain, then, from what has been said, that to employ the term tubercle in a 'comprehensive sense'—that is, in a sense depriving it of any definite meaning—and to maintain, as so many distinguished persons still strive to do, the unity of phthisis, is to reject the most precious results of pathological research, to ignore the distinctions established by clinical enquiry, to relinquish the hope of a rational therapeutic, and to resign one's self for ever to the guidance of a blind and capricious empiricism.

The patient whose history is above recorded seems to have been the subject of constitutional fibroid degeneration (fibrosis), which, affecting lightly now one organ or texture and then another, at last localised itself in an especial and destructive manner in the left lung. It is therefore described as a case of 'fibroid phthisis.'* In this term the author proposes to

* This term is also used, though in a more restricted sense and with somewhat different views, by Laycock, perhaps the first to recognise the distinctive nature and importance of cases like the one now described, and by H. G. Sutton in his important and able paper on Fibroid Degeneration.

embrace all those cases, whether local or constitutional, which are anatomically characterised by the presence, in a contracted and indurated lung traversed by more or less dilated bronchi, of fibroid tissue, and of a tough fibrogenous substance, together with cheesy deposits or consolidations, and usually small cavities commonly found about the middle and lower parts of the affected organ. Several objections may be justly made to the designation proposed; but in the writer's mind they are all outweighed by this great advantage: the name expresses the leading anatomical fact of the disease, and whilst theories of its nature will change, the structural character must remain always the same. The history of what was once called the inflammation globule and exudation corpuscle is sufficient to convince one of the evil effects of a hypothetical naming. Even now pathology has not recovered from the perplexity and confusion introduced by this reprehensible terminology.

The case, though in several ways imperfect, has been selected for discussion because its main points are still fresh in the recollection of numerous persons who saw the patient during life; and because, though a bad example of the disease intended for illustration, it will be a good test of the strength of those arguments by which its claims to a distinctive name will be assailed.

At the bedside, even at the first examination, a diagnosis was not difficult to frame. Tubercle was excluded by the absence of any evidence of structural disease in the right lung. Had disease of such extent as existed in the left lung been tubercular, the right lung would not have been free from evidence of kindred lesions. Besides this, the left apex was presumed to be free; there was no great hurry of the circulation, no evening fever, no continued elevation of temperature, and no profuse perspirations. Until the advent of death the skin was dry and inactive. Lastly, in the presence of positive signs of another constitutional disease, the occurrence of diarrhœa cast no serious doubt upon the propriety of the exclusion. The author is conscious that this opinion is not shared by others. Sutton especially mentions the absence of ulceration and of diarrhœa, as points of diagnostic importance. But the present case affords another illustration of the fact, which experience has peremptorily taught the writer, that the occurrence of ulceration of the bowels in the course of chronic disease of the lungs is not conclusive as to its tubercular character. Deposits in and ulcerations of the intestinal glands may occur in almost any form of chronic disease to

which the lung is liable. The diagnosis lay between chronic fibrinous pleurisy, common cirrhosis, and cancer: there was no other disease which could account for the contraction of the lung and the displacement of the heart. But the contraction did not occupy the place, and was plainly not of the composite character peculiar to contractile pleurisy. Moreover, disintegration of lung was proved, if not by the physical signs, at least by the presence of lung tissue in the sputum. This last reason also sufficed to show that the disease of the lung was not a mere cirrhosis. Was it, then, a cancer? The aspect of the patient, the rapid progress of the disease, its unilateral character, the retraction of the chest wall, the continuity and extent of the dullness, and the frequent attacks of hæmoptysis, all disposed one to the adoption of this conclusion. But then the very considerable contraction of the lung accompanied by moist râles, and a justifiable conviction of the presence of several scattered cavities, the absence of any evidences of outgrowth, enlarged glands or tumour in other parts, and the presence of positive signs of constitutional fibroid degeneration, eliminated the idea of cancer, and left to one the only tenable conclusion that the case under consideration was one of fibroid phthisis.

The existence of cheesy deposits in the lung was inferred partly from mere pathological experience, and partly from a belief in the existence of ulcerations in the bowels. Cheesy matter—that is, almost any pathological product in the way of retrogressive metamorphosis*—appears from experiments, often repeated by the author, to be in some manner an efficient cause of secondary deposits and diarrhœa.

The systolic basic bruit was inferred to be dynamic, and dependent on pressure, by reason of its variability, and the readiness with which it was influenced by changes of position, inspiration, and coughing. Some such bruit is nearly always present in advanced fibroid disease of the left lung.

The other points in the diagnosis admit of no further comment at present.

These remarks may, with propriety, be closed by a summary of the more important circumstances which can help one to understand the nature and correctly diagnose the presence of fibroid phthisis.

* That is so long as structural disintegration is incomplete. When all structural forms are destroyed, and the cheesy mass is composed of nothing but molecular débris, it loses in great measure, if not entirely, its power of producing secondary deposits.

1. Fibroid phthisis may have a constitutional or a local origin (Laycock; C. J. B. Williams; Handfield Jones).

2. When the disease has a constitutional origin, the fact will be indicated by the presence of signs of fibroid disease in other organs and tissues; by white skin spots (H. G. Sutton); by corneal degenerations (Canton); by anæmic urine containing granular matter, granular casts, or albumen; by evidences of cirrhotic or amyloid liver, of enlargement and hardening of spleen, and of induration of the nervous centres (Laycock).

3. The constitutional state of which these growths, deposits, or degenerations are the manifestations seems to be closely connected with, if not dependent upon, the abuse of alcohol (Huss), syphilis (Wilks), rheumatism (Laycock), gout (author), exhausting discharges (Dickinson), and defective excretion (author).

4. The actual product of this state appears either as a true fibroid tissue, or as a tough, hard, amorphous, fibrogenous substance (Williams; Walshe). The latter is closely akin to the 'amyloid material,' and even in the lung is sometimes reddened by iodine. It does not appear to be the product of cell proliferation, but to be the result of a real exudation in the ordinary sense of that term. The former can always be traced into continuity with perilobular, peribronchial, perivascular, or subpleural areolar tissue. The latter occupies the alveoli, and is often found in isolated patches. Structural elements, such as are seen in adjacent parts, are often found in it. When nuclei are present in it, they are the ordinary circular nuclei of the alveolar walls, and not the spindle-shaped or oat-like nuclei of connective tissue. In other organs, the fibrogenous material sometimes contains oat-shaped nuclei derived from proliferation of the vascular walls. To this source also are to be referred many of the nuclear fibres and spindle-shaped cells, supposed to be illustrations of the cellular development of fibrous tissue.

5. When the disease is not of constitutional origin, there will be found evidence either of the pursuit of some occupation exposing the patient to the inhalation of irritating particles (Peacock; Greenhow), of the existence of tubercular phthisis, long-continued bronchitis, or of some former attack of acute disease, such as fibrinous pleurisy, pericarditis, or what the author has called the corpuscular form of pneumonia.

6. The disease commonly affects one lung, and more commonly the left than the right.

7. If the disease affects both lungs, it is, as a rule, either the effect of mechanical irritation, or it is accompanied and has probably been caused by the presence of tubercles.

In rare cases, the double affection may be caused by rheumatism or syphilis (Wilks).

8. In fibroid phthisis there is always contraction of the chest-wall. The percussion dullness is harder, higher-pitched, and more uniformly continuous than in any other lung disease. Resistance of thoracic parietes is greatly increased. Intercostal spaces are depressed. Sometimes the dullness is tubular. Vocal fremitus is at one time increased, at another greatly diminished. Over the fibroid lung one hears blowing breath sounds, often without audible prolongation of expiration; occasionally coarse, dry, and moist râles, superficial creaking, and diffuse bronchophony. Over cheesy deposits of any extent the breath sounds are sharply tubular, the expiration prolonged, and the vocal resonance bronchophonic, sniffling, and circumscribed.

9. If the apex of the diseased lung is early involved in the solidification, there is reason to suspect the existence of tubercles; if there is moist crackling in the supraspinous fossa, the suspicion amounts to probability; and if with the slightest dullness over the summit of the opposite lung there is any moist crepitation, doubt is practically no longer possible.

10. When the lung below the solidification is healthy, expiration is peculiarly prolonged and puffy.

11. When cavities exist, they commonly occupy the mammary region: occasionally they are found in the base, and with extreme rarity in the summit of the lung. (Sutton's cases appear to have been complicated with tubercles.)

12. When about the middle of the lung several cavities lie near together in a horizontal or diagonal line, and are bounded by solidified lung, they are in all probability due to dilated bronchi. Cavities resulting from the breaking up of cheesy deposits are commonly isolated, irregularly placed, larger, and yield on auscultation unmistakable cavernous or amphoric breathing and pectoriloquy. The only certain evidence, however, of the existence of cheesy cavities is the presence of areolæ of elastic tissue in the sputum.

13. In the neighbourhood of the solidified lung it is not uncommon to find patches and tracts of lung in a condition of extreme vesicular emphysema; and the atrophic changes constituting it appear in many instances to be due to plugging, or some other obliteration of branches of the pulmonary

artery. It is therefore a statical as opposed to a dynamical emphysema.

14. When the left lung is affected, the heart is usually displaced upwards, and a little outwards. When the right lung is affected, the heart is drawn chiefly outwards and a little upwards. In both cases, a low-pitched systolic bruit is commonly heard over the pulmonary artery.

15. The cough is paroxysmal, and ordinarily induces vomiting. The expectoration varies: it is usually yellowish, greenish, or ashen grey, studded with pigment streaked with blood; sometimes fœtid, and ejected with difficulty after several ineffectual fits of exhaustive coughing.

16. The general symptoms, viewed collectively, are strikingly different from those of tubercular phthisis. The skin is, local sweats excepted, dry and inactive; there are no profound exhaustions, no continuous elevation of temperature, no evening fever, seldom any hectic flushing. Till the disease is far advanced, the breathing is quiet, and the pulse below 84.

17. Slight œdema of the lower extremities is very common in the course of this disease, and almost always present at its close.

18. Patients who have long suffered from fibroid phthisis, whether of local or constitutional origin, become at last pallid, waxy-looking, and cachectic.

19. The disease is commonly slow in its progress, and when it complicates tubercles it retards disintegration and greatly prolongs life. This may explain some of the cases of unusually protracted phthisis in spirit drinkers.

20. The frequent occurrence of even copious hæmoptysis, and the setting in of diarrhœa in the course of this disease, may justify a suspicion of the development of tubercles, but are not conclusive evidences of their presence. Hæmoptysis, diarrhœa, and ulceration of the bowels often occur during life without a solitary tubercle being found after death.

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